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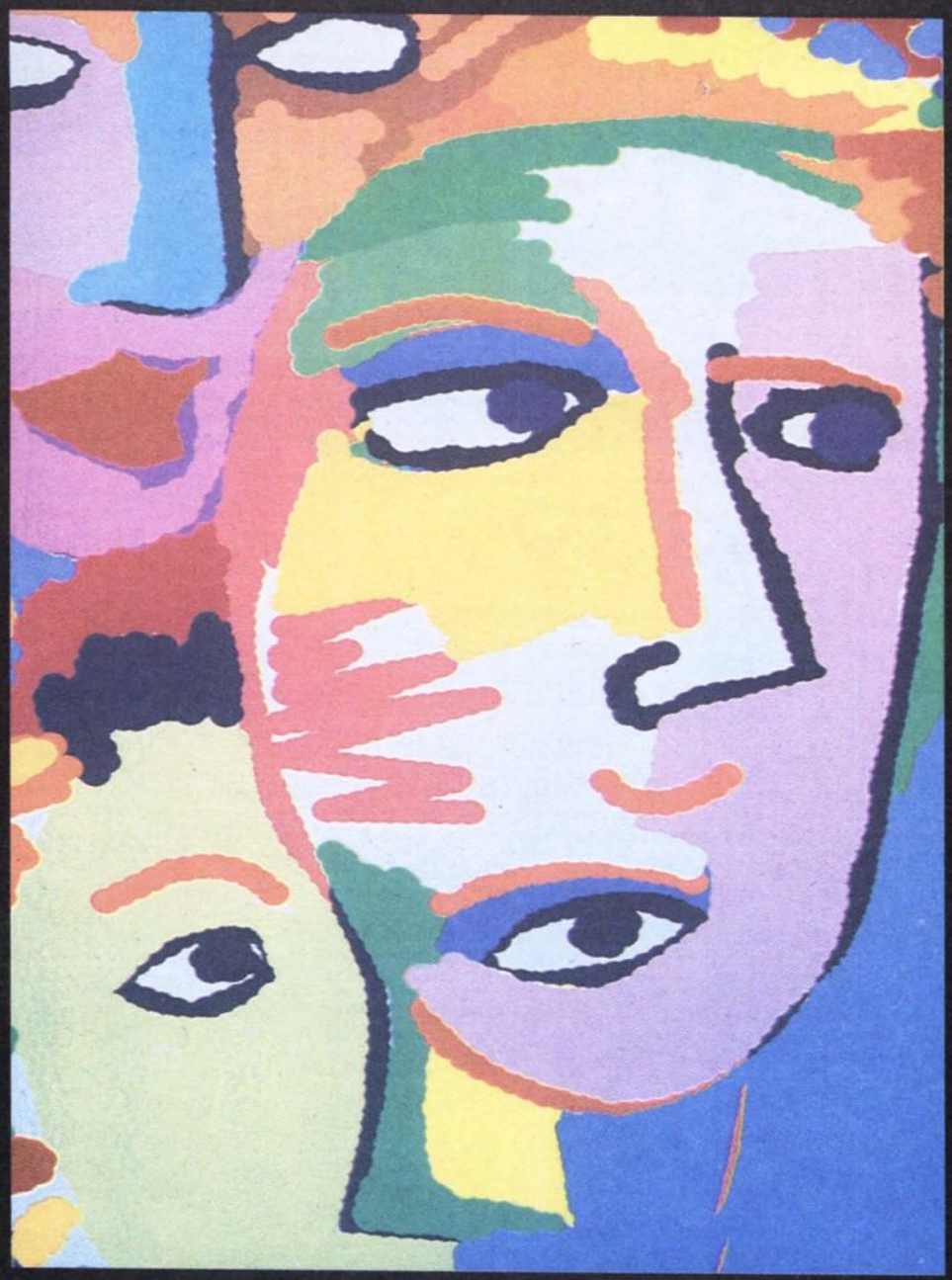

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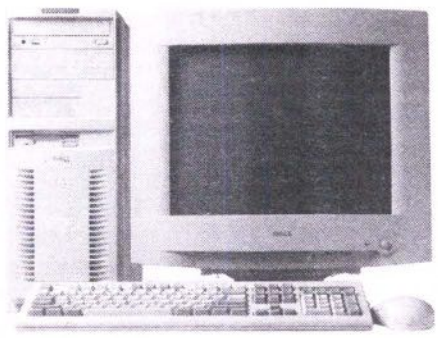

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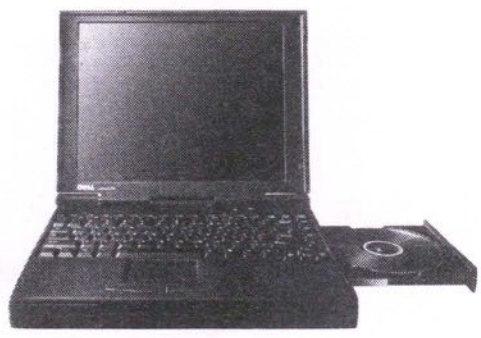

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In 10 years our kids are going to say 'There was a time when computers could not read, talk, and see.'

— Bill Gates, CEO, Microsoft

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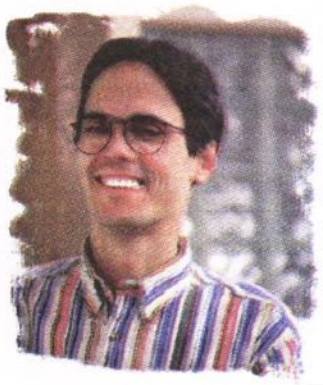
Don't buy a Web TV

If Statistics Canada is correct and only 10 percent of the Canadian public is logging on to the Internet from home, then the computer industry has done a rotten job of getting people wired, despite all the hype. At the recent Comdex trade show in Las Vegas, vendors, such as Sony, Philips, Apple and others, were lining up to sell $300 to $500 black boxes designed to get you surfing the Web with your TV.



TVs aren't computer screens.

I admit it, I am biased. We are a computer kind of family. In my household, TVs aren't for interactivity, they are for vegging out in front of. When my son was young he had an 8-bit Nintendo game. We used to regularly battle him for the use of the TV, because he wanted to play a game and we wanted to watch a video.

They don't call computers personal computers for nothing. The whole thing about interactivity is that my interactivity is not likely to interest my wife or my kids and vice versa. Web surfing seems like an inappropriate family activity. Think about when you have to share a newspaper with someone else. How often are you turning the page when the other person wants to keep reading, or vice versa? People read at different rates and have different interests. Even beyond these basic individual differences, here is why I think you might not be happy with what you get from these little black Web TV boxes.

Your first problem in surfing the Internet from your television set is screen resolution. Mel Gibson and Demi Moore might look great on your big screen TV, but the text from the Internet looks lousy on the screen resolution of most television monitors. To their credit, WebTV units from Sony and Philips seemed to do a reasonable job of using large, readable fonts to keep text readable. Not all units I saw looked this good.

These black box units are non-standard. Different vendors are using different operating systems and software on them. WebTV and Diba were two popular brands around the Comdex show floor. They seemed well supported at the show, but in the fast moving consumer electronics field, this year's hot product is often in next year's remainders bin and development ceases. Because the Internet is changing so fast, you want to know that the product you buy will be supported well into the future. With PCs, you have more of a known quantity. With Web TV units, it is a new universe and no one can guarantee at this point which units will take off.

Limited upgradablity

Many of the units seemed to have only limited upgradablity. Because they were designed to be very simple, you could not add memory or hard drives to most. The Apple @World Pippin, which was based on the Mac Operating System, was the notable exception. The problem I saw with the Pippin was that, although you can run Pippin titles on a Mac, you could not go the other way round and run Mac titles on a Pippin. I am not quite sure who dreamed up that strategy, but it does not seem like a good one to me.

The lack of local hard drives on Web TV appliances means that the consumer becomes dependent on an external service to store the information that they create and capture. The WebTV units I looked at from Sony and Philips would not allow you to select your own Internet service provider. Because of the proprietary interface, you had to use a specific vendor, which may or may not have competitive pricing now and in the future.

Some of the wizzy new software ideas from the Internet won't work on them. Sure, if written in Java, it will probably work, but many of the cool new things on the Internet are coming from small companies using non-standard approaches. Things like RealAudio, QuickTime, VRML, etc., are all here now for Macs, PCs and many Unix boxes, but will they be there for your little black box? Will that little black box have the memory to run them? Will you be able to add more memory? Will it cost you and arm and leg because it is proprietary memory?

The biggest problem I see with these Web TV devices is that they are aimed at the Internet, which is still very much a moving target. My computer can adapt and grow as the Web changes. I can add inexpensive RAM and hard-drive space, even upgrade my processor speeds as the need arises. It seems too early to me to create a lowest common denominator platform like these represent.

We have been down this road before, and I am here to tell you it ain't worth it. I predict that, after an initial flurry of use, they will end up in the closet like the early Commodore 64 computers with many unhappy purchasers. I stand to be corrected by massive sales of these units, but for my money, I'd buy an inexpensive computer instead. For as little as $1,200 you can have a computer capable of not only surfing the Web, but also charting spreadsheets, desktop publishing, playing 3D games and creating databases.

Internet for Grandma

One cool device that I saw at Comdex that did seem worth considering was from Uniden, a telephone manufacturer based in the United States. I liked these units, because simple e-mail is fairly standard. Text-based messages can do the job for most people right now. Uniden used OS9 to create a POP compliant e-mail phone. This striking looking unit is predicted to be available early in 1997 and sell for about $300 for a one-line cordless phone version.

It is about the size of a small thermal fax machine. The lid flips up to reveal a small keyboard and screen, with which you can do the basics of e-mail. It only does text-based e-mail and cannot handle any file attachments, but it is always on (no boot up time) and can be set to poll your mail server at whatever interval you set it to. I think I have finally spotted a way to get my computer-reluctant mother on e-mail. Three numbers to program and five bucks a month for an e-mail-only account—this seems like a dream unit.

The rest of this issue is packed with information and ideas to ease the pain of choosing and getting up to speed on a new computer. If you are already there, we encourage you to pass this copy around to your friends who want to get wired.

Enjoy the issue.

Douglas Alder
Editor/Publisher

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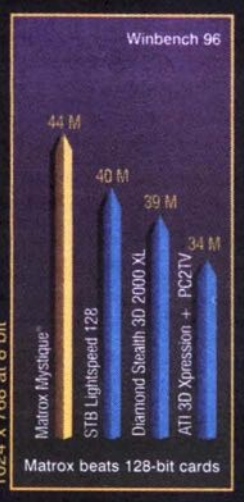

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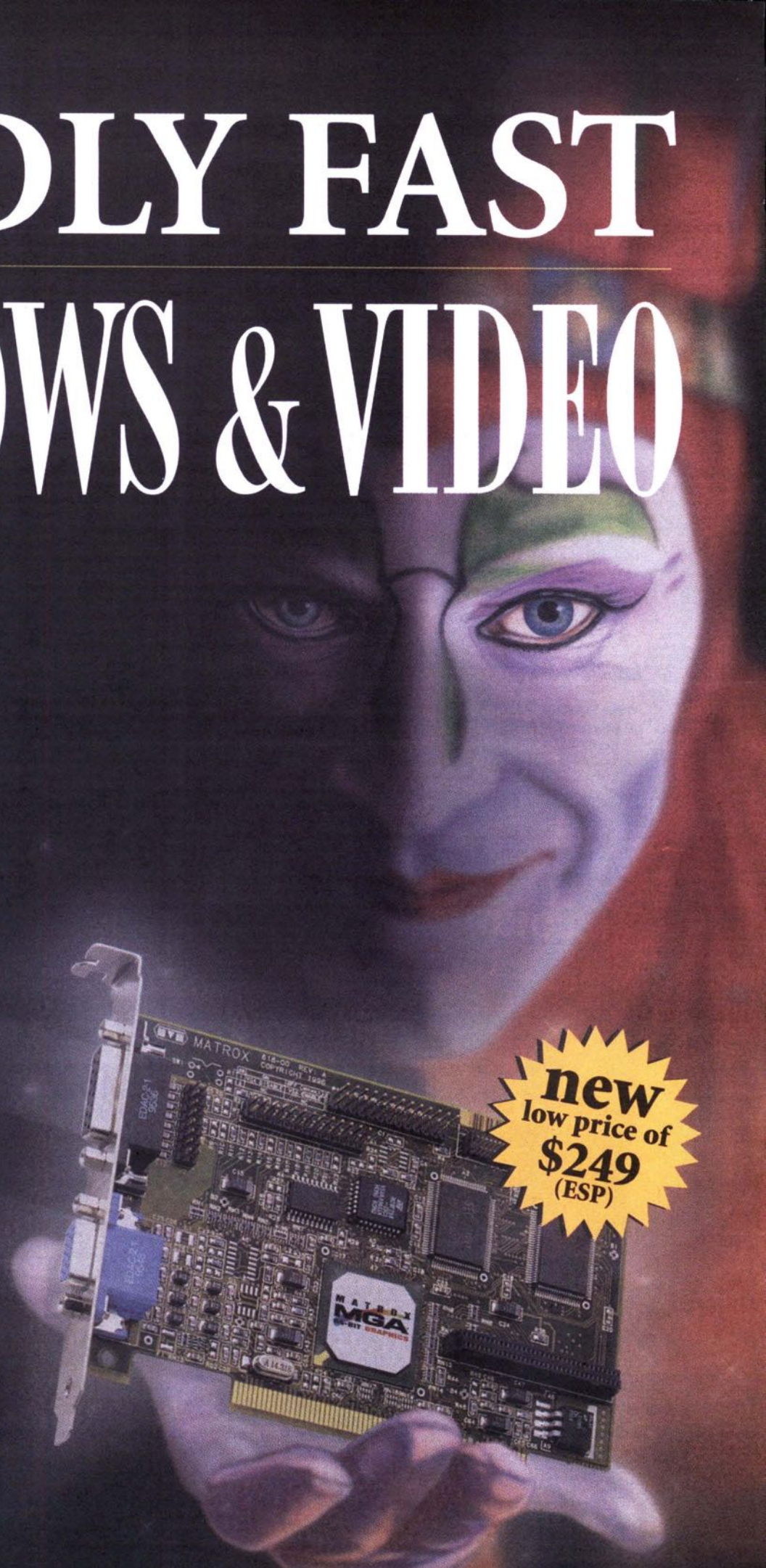

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32-pin SIMMs rare but real

I recently tried to upgrade the RAM (from 8 MB to 16 MB) on my four-year-old 486-33 and discovered I had 32-pin, 1 MB SIMMs. The stores I have checked with only carry 30-pin or 72-pin SIMMs. Do you know of anywhere I might obtain 4 MB, 32-pin SIMMs?

Also, I have heard rumors that I would be able to use 30-pin SIMMs in place of (or in tandem with) my old 32-pin SIMMs. Can you either substantiate this claim or refute it?

Jeff Wood, via Internet

GB replies: Never having actually seen 32-pin SIMMs myself, I did a search on the Internet and found 104 people having the same problem you're experiencing. The closest to a definitive answer seems to be that IBM on some PS/2 models and AST on some models used proprietary 32-pin SIMMs, which cannot be interchanged with standard 30-pin SIMMs.

Your options seem to be limited to contacting the manufacturer to see if it still carries the kind of SIMMs you need, or scour sources for used computer parts.

Please test motherboards

I really wish *The Computer Paper* would test out the wide range of Pentium motherboards that are available on the market.

Eddy Lau, via Internet

CF replies: Testing motherboards is something we have been considering for quite some time. We have at various times planned to do this and then put the project on the shelf. Testing motherboards is an extremely labor-intensive undertaking, as there are a lot of different brands and each motherboard needs to be setup with identical components before it can be benchmarked. I suspect that we will get to it in the future, but not in the next few months.

And if not motherboards, then honkin' fast systems

I think that you should do ratings on some high-end Pentium or Pentium Pro 200 systems. Right now, I'm looking for a really high-end system, and I want to know what would be the best configuration and when would be the right time to buy.

Sean Fraser, via Internet

SH replies: The Test Lab in our February 97 issue will feature high-end systems of the Pentium 200 MHz variety. Keep an eye out.

OS/2 did it first

I do hope Ross Macdonald was pressed for time on his "Looking forward to backing up" article in the November *TCP*, because otherwise I'd have to attribute this to either shoddy research, or the all-too-common journalistic inability to see anything outside Microsoft's little realm.

Mr. Macdonald, in writing about using large-capacity flopticals for backup targets, states that "there's no software yet to allow a backup to a PD in the sense that we normally think of a backup.... the PD won't recognize any existing back-up utilities that compress or automatically schedule or incrementally save, or any of that other neat backup stuff."

Maybe not in the DOS/Windows world.

Symmantec Fastback Plus for OS/2, on the other hand, has a few unique abilities. Besides the usual compression, scheduling and incremental backup functions, it supports four types of backup devices: standard floppy disks, floppy-connected QIC tape drives, SCSI tapes drives, and a little thing called "system devices."

A system device in Fastback/2 can be any drive with a recognizable drive letter, removable or fixed: local disks, network drives, ZIP and JAZ disks... and, as long as a PD drive can be given a drive letter under OS/2, Fastback/2 should be able to nicely back up to that as well (if someone would be kind enough to send me a PD machine and disc, I'll be happy to put this to the iron test). Just peel off a new system device template, open the Settings/Properties, select the PD's drive letter on the "Path" notebook page, and you're off to the proverbial races. Works like a charm with my ZIP drive, and if I'm really in a weird mood, I can even create a system device for my RAM disk.

Just for the record, BTW... Fastback/2 has had this ability for a couple years now. Of course, I expect no one will care until Microsoft comes out with something similar for Windows <insert year>, at which point it will be touted as the greatest thing since sliced 8-inch floppies...

And while we're on the subject of OS/2 . . .

I find it very disturbing the type of coverage you gave OS/2 Warp 4.0 in your October issue of *The Computer Paper*. There were only two half-page columns pertaining to it's release, whereas, one year ago, when Windows 95 was released (August '95), the front page of your paper was a full-page Windows 95 logo. And there were four to five pages of columns pertaining to it's release.

Has the media influenced your paper so much that everything in your paper is either Windows 95 or it doesn't make the press?

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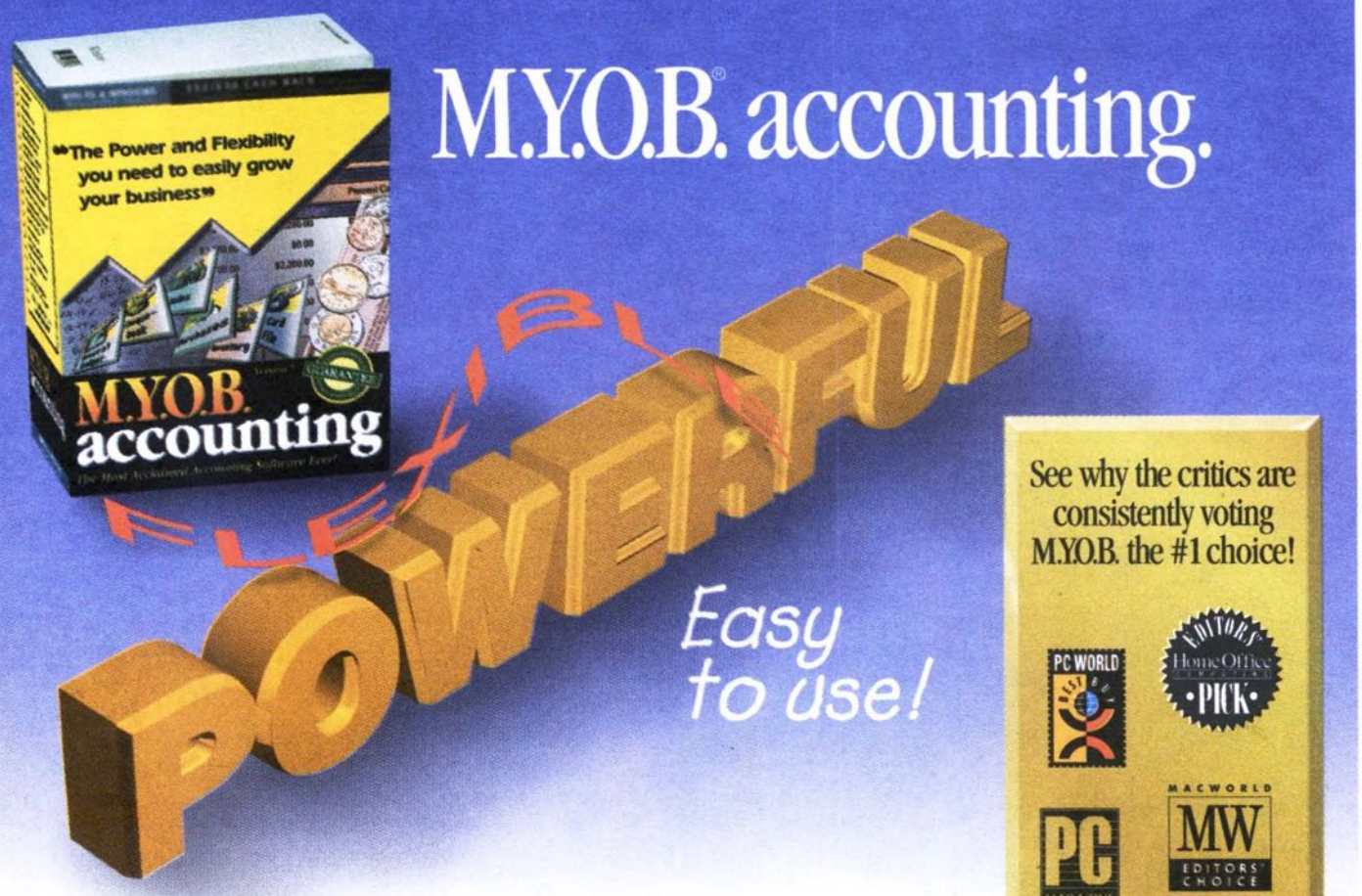

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Also, I would even be surprised to find a column about the widely anticipated—amongst expert computer users and ISPs—release of Linux 2.0 (aka Linux 96). What has happened to one greatest computer papers? Has the media taken it over? Appears so.

Michael Thorndyke

To thine own eyes be true

In *TCP*'s November Lab Test on color inkjet printers, you rate the Canon BJC 4100. Since then the Canon BJC 4200 has come on the market and I was wondering how you rated it. I went to a retail store to check out their printers and compared the Epson Stylus Color 500, Canon BJC 4200, and the HP 680c. They had samples on the same paper, same resolution, and same picture. To my eyes, the Canon BJC 4200 was the winner. Please let me know your comments.

Arthur Owen

DT replies: We have yet to test this new Canon model. However, each one of these brands has a good share of the market and many satisfied users. Sometimes, after all the measurement are taken and the tests run, subjective experience is the deciding factor, so if it looks the best to you, that should be a factor in your buying decision as much as the performance figures.

Where's the one-line, many-devices piece?

In your November '96 issue a letter from Glenn McCauley refers to an article "One phone line, so many devices" in *TCP*, November 1996. I have been trying to find this article in online past issues (I assumed the above reference is incorrect, since the letter was in fact in the November '96 issue) and have been unsuccessful.

Please let me know where I can find this article if it is available.

Al Mallory

DT replies: We received a lot of comments on this article, which unfortunately, did not make it into the Prairie and Eastern editions because of space limitations.

The article date cited in the November letter is wrong, as you correctly presumed. In fact, the article appeared in the October 1996 edition. An online version is available at our Web site at http://www.tcp.ca.

Don't pun-ish me with your heads, or complaint letter #53

If most of your readers are like me, we're quite tired of being barraged by all of the "cute/witty" titles found everyday in newspapers, magazines, computer papers, etc.

Putting an end to these titles would save your writers/editors the time of dreaming up the literary gems, and it would spare your readers the time to figure out what they mean.

From your Nov. issue:

As printed	How about
Scanning the horizon	Scanners
The virtual paper chase	Document imaging
Computer: read this page	OCR packages

In most cases, simply reversing your first bolded title with your second line of description would make a world of a difference. Be as cute as you want in the second line, but not the first please.

By the way, you have a great computer paper going for you apart from this. Keep up the good work!

Eric Greenspoon, via Internet

Canon corrections

With regard to our November '96 Test Lab on inkjet printers, Canon has asked us to note the following. Although the Web address we had listed at http://www.canon.com was correct for the company, they also maintain a site that links you directly to their computer-related product line. This can be found at http://www.ccfi.canon.com. Also, we've been recently informed that the neon inks that were mentioned in the article for the Canon printer(s) are available only in the United States. Please take note of the following corrections as well, which were errors on our part: the warranties on the Canon 240 and 4550 models are for one year only, and the correct toll-free number for Canada-wide support is 800-263-1121.—*SH*

Payroll survey information missing

In our December '96 Annual payroll survey, we inadvertently left out the contact information for the Paymate program.

Paymate is from:
AK Microsystems
245 West Beaver Creek Rd., Suite 9b
Richmond Hill, Ont.
L4B 1L1
phone 905-771-1155
fax 905-771-1344
toll free fax 800-263-3795

For more information in Canada, call Keating Technologies Inc., (800) 565-3284, In Toronto (905) 479-0230
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Kodak launches new digital camera • In the continuing fight for supremacy in the digital camera wars, Kodak has launched another salvo against the competition with the introduction of its DC25 Digital Camera. A camera aimed primarily at the home-user, this low-cost successor to the DC20 digital camera contains more features that both Macintosh and PC owners can use.

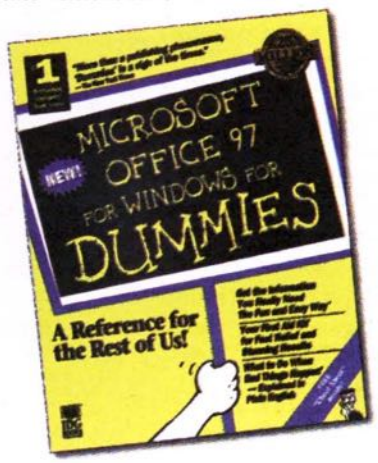
Digital cameras snap pictures without film—the image is captured on a digital microchip, which can then be downloaded to a computer. Once transferred, the image can be edited, and then used in such things as presentations, e-mail, and Web pages.

This 13x4x7 cm (5.1x1.6x2.8 in.), 270 g (9.5 oz.) camera can shoot pictures in two resolution modes—high (493x373 pixels) and standard (320x240 pixels)—in 24-bit true color. The DC25 is the first Kodak camera to feature an LCD viewfinder. Its 4 cm (1.6 in.) color screen allows the user to see exactly what the camera sees before taking the picture. It comes with 2 MB of internal memory, which can store up to 14 high-resolution or 29 standard-resolution pictures. The camera also supports Kodak Compactflash memory cards, so once the camera is "full," you can replace the current memory module with another to keep on shooting.

The DC25 is a point-and-shoot camera, with a focusfree lens and automatic flash for taking pictures both indoors and out. Users can also review the past few pictures on the LCD screen and then decide to save or delete them. Kodak Picture Easy software is included with the camera. The suggested list price for the DC25 is $695.—*KS-R*

Contact: Kodak Canada, Tel: 800-465-6325.
Web site: http://www.kodak.com/

More For Dummies in 1997 • IDG Books Worldwide, which publishes the fantastically popular *For Dummies* series, has announced their latest editions to the line, including *Microsoft Office 97 For Windows For Dummies, Word X For Windows For Dummies, Excel X For Windows For Dummies*, and *Access X For Windows For Dummies*. Pitching the *For Dummies* line as "a reference for the rest of use," John Kilcullen, the creator of the *For Dummies* franchise, has selected writers for their combination of technical expertise and the ability to organize information effectively and to communicate in plain language that the ordinary PC user can understand. For even quicker comprehension and access to information, IDG also publishes a *Quick Reference* line of books aimed at providing the most commonly used features of these programs explained step by step. The *For Dummies* titles sell for $26.99 each, and the *Quick Reference* versions for $17.99 each.



IDG also publishes a line of references for the educational market, the more gently and politically correctly named *For Teachers* series. Four new titles have been announced, *Microsoft Works for Teachers, Window 95 For Teachers*, and *Microsoft Office 97 For Windows For Teachers*, and *The Internet For Teachers, 2nd Edition*. These titles sell for $34.95 each.—*JE*

Contact: Macmillan Canada/IDG Books Division, Tel: 416-293-8464. Web site: http://www.idgbooks.com

Web users "discover" EXN • On Dec. 31, 1994, the first site by a Canadian broadcaster appeared on the Web—it was launched by The Discovery Channel Canada. And two years later, after other Canadian broadcasters have created their own Web sites, The Discovery Channel's site (see contacts) still attracts more than one million visits a month, and was recently voted the top Canadian broadcaster Web site by *The Globe and Mail*.

The Discovery Channel has recently launched what it calls "the next step in online interaction" with the unveiling of EXN—the Exploration

Continued on page **12**

DataTrain
MONITORS

Legends ... that's what DataTrain monitors have become.

And with good reason: DataTrain monitors are among the top sellers in Canada according to Evans Research. Now, the legend continues with DataTrain's rollout of nine fully retooled monitors boasting all of the latest technological and environmental advancements plus our famous two-year, no-nonsense warranty.*

Whether you need an entry-level 14", a multimedia monitor or a screen that boasts 19" of viewing space, there is a DataTrain monitor for you.

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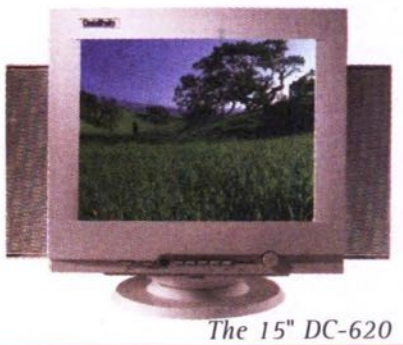
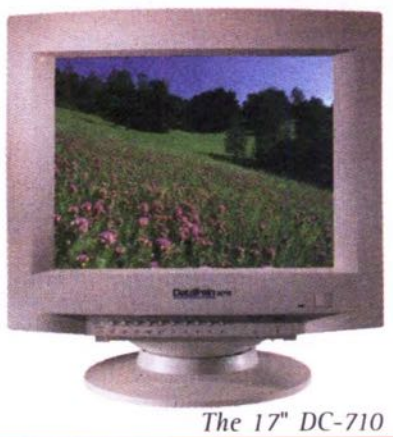
*Source: Evans Research Corp. 1996


The 15" DC-620


The 17" DC-710

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Tel: (604) 273-4453 / Fax: (604) 270-7150

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5990 Falbourne Street, Unit B, Mississauga, ON L5R 3L8 Tel: (905) 712-2000 / Fax: (905) 712-0041

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381 McCaffrey Street, St. Laurent, PQ H4T 1Z7
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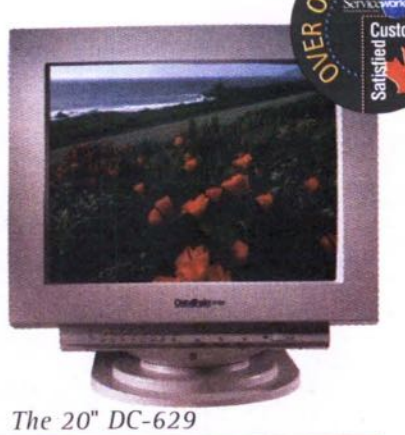

The 20" DC-629

The 15" DC-605

VALUE & PERFORMANCE

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WHAT'S NEW

Continued from page **10**

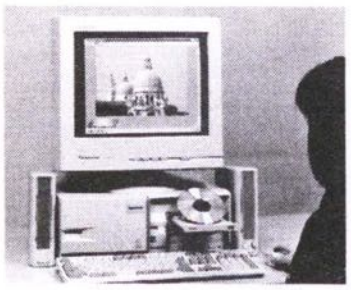
Network. This site is a dedicated science Web site that contains its own content and identity, yet incorporates the science programming themes of Discovery Channel Canada. The goal of EXN is to provide viewers with a way of getting another dimension and more information on topics covered in the programming contained on the channel. EXN's focus includes scientific innovation, educational content and technological magic, and will feature daily science news, features and an "Amazement Park."

EXN News presents short science news stories of the day, designed to complement the stories covered on the channel's flagship daily science show @discovery.ca. Feature stories by the EXN news organization offer a more comprehensive look at some of the most intriguing science issues, and the "Amazement Park" is EXN's experimental section, where the leading edge interactive components can be found. The Discovery Channel has entered into partnerships with Environment Canada, the Canadian Space Agency and The National Research Council, to showcase the latest in multimedia Web technologies.

EXN is a major investment for The Discovery Channel, which plans to spend $5 million on its development over the next five years, as part of its commitment to the Canadian Radio-television and Telecommunications Commission to develop Canadian media. The site has already passed the one million hit mark, and lays claim to being Canada's foremost science resource centre, offering television viewers and Internet users alike a means to learn about science. Interesting developments in the world of science and of the World Wide Web are taking place at EXN—stay tuned!—*KS-R*

Contact: EXN, Web site: http://www.exn.net/
Discovery Channel, Web site: http://www.discovery.ca

Matsushita to ship DVD drives • Spokesmen for Matsushita Electric Industrial Co. Ltd. said they expect to begin shipping DVD-ROM drives in volume early next year. DVD-ROM drives are the successor to the CD-ROM format, which read discs that are about the same size as a regular CD-ROM, but are capable of holding 4.7 GB of information, as opposed to the 650 MB of data regular CD-ROMs hold.



Matsushita, better known for products sold under its brand names, like Panasonic, Technics and Quasar, has already begun to ship sample drives to prospective original equipment manufacturer (OEM) vendors. The firm is confident that other providers of digital media (such as the sound recording and software industries) will be won over by their new DVD encryption scheme, which will prevent users from easily making copies of DVD discs. Matsushita also has plans to start mass production of recordable DVD drives (called the DVD-RAM), sometime late next year.

Matsushita expects to sell more than one million DVD drives within a year of their launch, and expects stiff competition in the marketplace for such devices. Mass production will likely see DVD drive prices in the $250 to $350 range for OEM vendors, and somewhat higher for end-users.

As a prelude to the introduction of DVD for use in the home, Matsushita announced the development of the world's first DVD Internet Linkage System for the World Wide Web, which can play high-quality MPEG2 video through a Web page. The Web client setup consists of a DVD-ROM drive, an MPEG2 decoder board, an HTTP Request Conversion Program, and software to combine motion pictures within Web pages.

With this setup, Webmasters can deliver large quantities of MPEG2 motion pictures which are played directly from the DVD-ROM to the Web page when requested. A disc identification number keeps track of the items requested, so it can used for a wide variety of services, such as Web-based catalog shopping, publishing, travel, and educational purposes—*KS-R*

Contact: Matsushita, Tel: 905-624-5010

vision.com cable consortium offers national high-speed Internet access • The cable industry's research and business development consortium vision.com recently announced the national roll-out of WAVE, a high-speed Internet access service delivered through cable. WAVE uses cable modems plus a combination of fibre optic and coaxial cable to bring high-speed Internet access to the home.

WAVE is vision.com's first collaborative effort. (vision.com consists of Rogers, Shaw, Cogeco/Cablenet, Western CoAxial, Cable Regina, Delta Cable, Access Cable Television, Videon CableSystems and Vidéotron, who together serve more than 80 percent of the total cable subscribers in Canada.)

WAVE does not require a dedicated phone line or dialup modem—instead users are always connected to the Internet via cable, much as their television is. "The cable industry will now offer Canadians the fastest, most convenient access to the Internet," said Richard Stursberg, president of vision.com. "Internet users will find we have the best technology and the most responsive service available. The Internet is an amazing place. WAVE turns it into a faster, amazing place unleashing the potential of the Internet by bringing high-speed, affordable bandwidth to the home. Wherever WAVE has been offered it has had far higher penetration than telephone offerings."

Only about 200,000 current cable subscribers serviced by the vision.com consortium are ready for WAVE, but by the end of 1997, this number is expected to rise to over two million Canadian homes. Until they become commercially available, cable modems are rented from a cable company and virtually unlimited access to the Internet is included for one monthly fee of $55. A subscription to WAVE also includes up to five e-mail addresses and 5 MB of Web space dedicated to home pages.—*KS-R*

Contact: WAVE, Web site: http://www.wave.ca/
For more information, call your local cable company.

Canadians tackle Net content concerns • TORONTO (NB)—Two Canadian companies and a number of Canadian educators are working in their own ways on the problem of keeping children away from inappropriate Internet content. Calgary-based Net Shepherd Inc. has announced a content-rating program called the StartSafe Challenge in co-operation with the federal government's SchoolNet, while Vancouver-based Net Nanny Ltd. has just announced a new release of its namesake access-control software.

Kevin MacDonald, a spokesman for Net Shepherd, said his company launched the StartSafe Challenge to have teachers, librarians, and other qualified educators rate the roughly 57 million documents available on the World Wide Web. Through a collaborative rating system using Net Shepherd's DAX Hound software, participants will assign ratings ranging from general through objectionable documents, and also by quality using a five-star system. These ratings will be placed in a database for future reference.

SchoolNet, the network the Canadian government set up to link Canadian schools, is supporting the project, and Net Shepherd issued a challenge to schools in the United States to participate as well. MacDonald said his company plans a major promotion of the project in the United States later this year.

Les Jickling, marketing coordinator at Net Nanny, said schools are showing a growing interest in his company's software, which allows parents or teachers to limit access to Web sites. This is partly because the issue is getting a lot of public attention lately and partly because schools are using the Internet more and more, he said.

Net Nanny has just released Version 3.0 of the software. One new feature is the option of creating a "Can Go" list, so that only listed sites are accessible, as an alternative to the earlier version's "Can't Go" approach, which required updating to keep up with the discovery of new sites that needed blocking.

Jickling said businesses are also showing interest in Net Nanny because it allows them to control time-wasting use of the Internet at work without blocking employees' access altogether. The suggested retail price for Net Nanny 3.0 is $39.95.

Contact: Net Nanny, Web site:
http://www.netnanny.com
Net Shepherd, Web site: http://www.shepherd.net/

Canadian ISP group announces code of conduct • TORONTO (NB)—The Canadian Associa-tion of Internet Providers (CAIP) has created a voluntary code of conduct that it hopes its members and other Internet service providers (ISPs) will follow.

The code pledges compliance with all applicable laws, and in particular commits ISPs not to knowingly host illegal materials on their systems. It also promises respect and protection for users' privacy, and a commitment to public education about Internet issues and technology.

Margo Langford, general counsel for iStar Internet Inc. in Ottawa and chair of the group that drew up the code, says there is no formal policing mechanism at the moment, but CAIP may at some point in the future make compliance with the code a condition of CAIP membership.

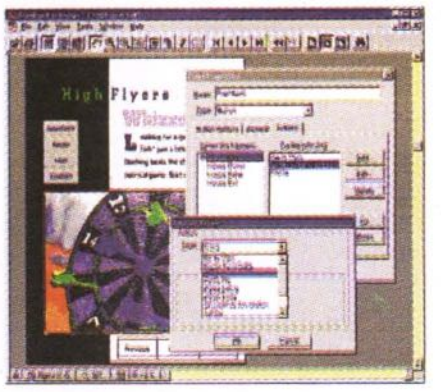
The organization currently has about 40 members, or about 10 percent of Canada's ISPs, Langford said. However, those ISPs serve somewhat more than 10 percent of Canadian Internet users. IStar Internet, Canada's largest ISP, has about 13 percent of the overall market, she said, and several other sizable ISPs are also CAIP members.

Langford said the code's commitment to not knowingly host illegal material means ISPs will remove material that is illegal—such as child pornography—if it is brought to their attention. Clauses in the code also commit ISPs to make a reasonable effort to investigate legitimate complaints about content they host, and to notify the content provider or abuser of the complaint before taking action.

On the privacy front, the code states that ISPs will provide private information to law enforcement authorities only as required by law.

Contact: Ron Kawchuk, at CAIP, Tel: 905-279-6417.
Fax: 905-279-9418. E-mail: kawchuk@io.org

New Acrobat 3.0 is more Web friendly • Adobe has just released the latest version of Acrobat 3.0, which enables users to publish documents in a format that can be read across virtually all platforms. The newest version supports special features that make it more suitable for use on the World Wide Web, including integration with Netscape Navigator and Microsoft Internet Explorer, the two most popular Web browsers.



Acrobat creates a graphic file type from word processing and desktop publishing programs that can be read using Acrobat Reader. Like hypertext markup language (HTML), it is also possible to embed hyperlinks into other parts of the document, or other places on the Web, but unlike HTML, all of the font and formatting information of the original document is retained. Another advantage of this format is due to the fact that Acrobat Reader is available for most computing platforms, so the resulting PDF image file can be read by almost anybody with a computer.

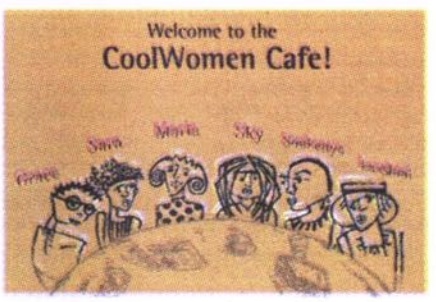
The new version of Acrobat offers integrated viewing of PDF documents directly through Web browsers that support the full Netscape Navigator API architecture. Files can also be created to optimize the resulting PDF files for online delivery, so duplicate background objects, such as text, line art and images, are combined to reduce file size. The PDF format now provides page-on-demand access, displaying each page of the PDF document as requested, whereas previously the entire document file had to be downloaded first.

PDF files can also be embedded directly within an HTML page using the HTML <EMBED> tag.

In addition to these Web enhancements, macros have been included to enable Microsoft Word and Microsoft Excel for Windows 95 users to create Acrobat files directly from either program. Image files can now be directly scanned into the PDF format, and touch-up text editing tools are now included for making quick changes to an Acrobat document. Adobe Acrobat 3.0 has an expected street price of $295.—*KS-R*

Contact: Adobe Canada, Tel: 416-360-2317.
Web site: http://www.adobe.com/acrobat

CoolWomen surf the Web • A new CoolWomen Web site is online "to tell the stories of the lives of women in Canada in a down-to-earth style which highlights their dreams and



their goals, and what their stories mean to other girls and women." According to Nancy Ruth, one of the 12 people who developed the site, "the story of women in Canada is now online across time in a format that is fun and appealing for all generations. The Web site creates a comfortable place where girls and women can experience the

lives of others in Canada, from many different times and backgrounds, and explore their passions, perspectives and legacies."

The CoolWomen site features a virtual cafe where discussion takes place, a bulletin board for upcoming events and other information.—*JE*

Contact: CoolWomen, Tel: 416-924-6961.
Web site: http://www.coolwomen.org

Halifax company wins IDC research grant • NB—Brooklyn North Software Works, a two-year-old developer of hypertext tools for the World Wide Web based in Halifax, N.S., has won the first annual Software Market Research Grant from the federal government. The Industry Canada grant provides Brooklyn North with $20,000 worth of market information and analyst services from Toronto's International Data Corp. Inc. To qualify for the grant, which will be offered again next year, a software company must have a head office and development facilities in Canada, a product on the market, and annual revenues between $200,000 and $5 million.

Pink Panther's passport to peril • A new CD-ROM title from New York-based Wanderlust International features the animated adventure of the popular cartoon cat, offering a mix of humor, problem solving and action. The Pink Panther character, originally introduced in the Inspector Clouseau live-action comedies in the 1960s, has been licensed from its copyright holder, MGM/UA Family Entertainment, to star as an international agent seeking to protect international travellers from a variety of dangers. Like Corel's new Wild World of Madison Jaxx game, the Pink Panther's Passport to Peril offers an element of learning, with a cultural database of over 250 pages of info and pictures on food, peoples and languages, nature and history.—*JE*

Contact: Wanderlust, Tel: 212-966-8887.

PageMart Canada introduces narrowband personal communications service • Industry Canada has awarded a licence to provide two-way wireless messaging services to Toronto-based PageMart Canada. The new licence will permit PageMart to establish two-way messaging and data communications, including wireless modem, information on demand, telemetry, and response paging.

According to PageMart, "Narrowband PCS (N-PCS) is thought of as an enhanced form of paging service, yet it really represents a shift in the entire concept of wireless messaging. The common name for this emerging technology is two-way paging, but because it encompasses so many advanced messaging services, including voice messaging, N-PCS more accurately defines the wide array of products and services coming to market over the next several years. E-mails, faxes and messages can be sent both ways, no fuss and no wires."

An example of what N-PCS will make practical would be the ability to use a notebook PC or a handheld personal digital assistant (PDA) to connect to the Internet via wireless modem to the PageMart network service. A wide variety of devices, from pagers to computers, can hook up to the N-PCS once it is in place.

PageMart intends to roll out a test version of the new service early this year, with wider availability mid to late 1997.—*JE*

Contact: PageMart Canada, Tel: 416-423-6605.
Web site: http://www.pagemart.ca .

"Marshall McLuhan, What Are Ya Doin?" • Marshall McLuhan, who began his scholarly life as a kind of prematurely middle-aged, fusty academic prude who viewed the mass media with alarm, eventually blossomed into the unintentional prophet of the Information Age. His often obscure catch phrases, such as "the global village," and "the medium is the message," have inspired much of the serious study of mass media and communications technologies in the last 35 years. As well, the "cyberculture" that emerged in the mid 1980s gained much inspiration from his writings. He is also the patron saint of *Wired* magazine in its mission to make the computer revolution hip.

Now, the latest in McLuhan-mania comes to you via the World Wide Web, with the launch of *Messenger—the Marshall McLuhan Movie*, a virtual film production studio that will allow subscribers to participate in every facet of the production of a real life documentary film on McLuhan, "from location scouting to camera reports to screening dailies to the number of sticky buns eaten (by the crew) each day. Other benefits include a ticket to opening night, and later, a VHS cassette of the film with the subscribers' screen film credit as an associate producer."

In other words, for a mere $49.95 fee, any wannabe filmmaker can participate, virtually, in the making of this film, and get a production credit on his or her resume, for what it's worth. As the title suggests, *Messenger—The Marshall McLuhan Movie* is a project designed to illuminate the connections between McLuhan's life and thought and the wired world of today. Subscribers

Continued on page **15**

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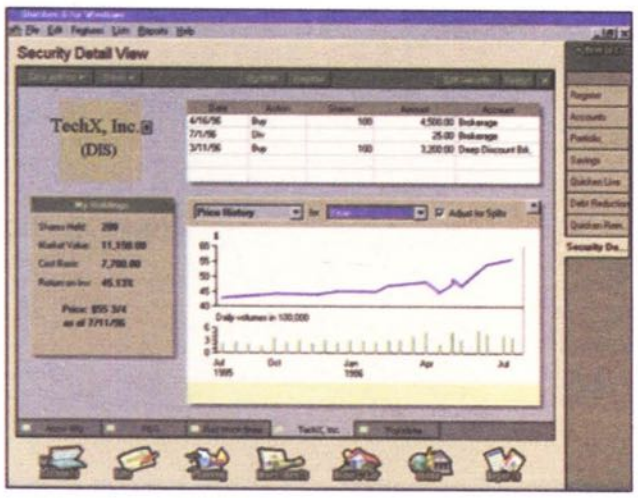

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SURF THE NET FROM WITHIN QUICKEN! There's a wealth of valuable information out there .... but finding it isn't easy or quick — until now. We're bringing you the best of the Web — with instant access to the best financial Web sites in the world. Plus, with our new Update feature, you can get the latest Quicken enhancements online all year-round.

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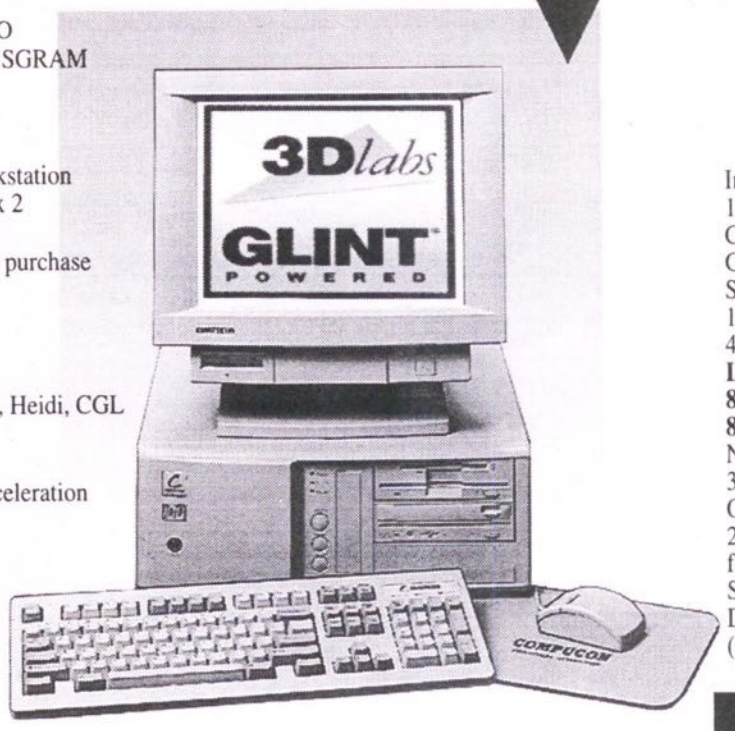

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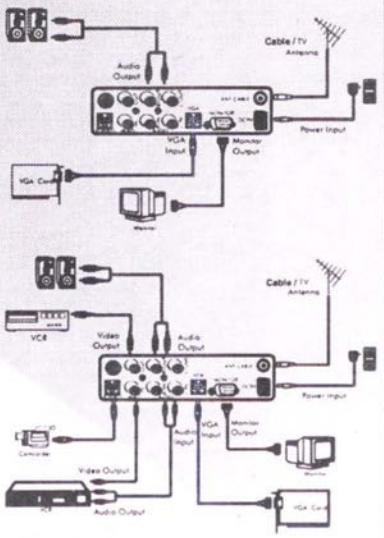

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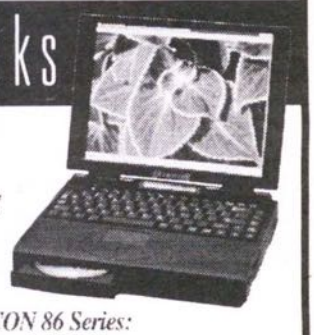

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Continued from page **13**

can participate in the project via the Internet in much the same way as one participates in growing a bonsai plant—you get to watch the thing taking shape, over time. As a realtime course in filmmaking, this could be of interest and instruction, not to mention fun, for the family's would-be George Lucas.—*JE*

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Canadian information technology Web site expands • NB—The Information Technology Association of Canada (ITAC) has expanded its World Wide Web site, adding links to market research, technology publications, and government agencies, as well as assorted other information.

ITAC, an association of information technology vendors that includes most of the larger computer and telecommunications suppliers in Canada, launched its original Web site in May, 1995, said Lyle Bunn, vice-president of communications. The site has now had a redesign, he said, and ITAC plans "a pretty aggressive rollout" of new material over the coming months.

The site now includes a "library" where ITAC policy documents are available for downloading and longer reports, as well as transcripts of speeches by ITAC officials, can be ordered.

The new InfoIT section includes links to a sizable list of federal and provincial government departments that offer services of interest to information technology companies, a link to research firm International Data Corp. (Canada) Ltd.'s Web page, a modest calendar of industry events, and a listing of meetings of standards organizations, along with other material.

Those who want to check industry news will be able to use links from the site to the sites of some high-technology publications, Bunn told Newsbytes. Those who are looking for information on IT products will find links to the Web sites of some of ITAC's member companies.

Bunn said ITAC will be posting some new statistics on the Canadian IT industry's size and growth rate within a couple of weeks, and a document dealing with the Year 2000 software problem before the end of the year.

Contact: Information Technology Association of Canada, Web site: http://www.itac.ca

Toshiba delays DVD launch in North America • TOKYO (NB)—Toshiba Corporation has delayed the American launch of its DVD (digital video disk) players. The company, which launched DVD in Japan on Nov. 1, blamed a lack of software titles for the delay.

Toshiba, which had planned to launch the players before Christmas, is now aiming for later this month or February.

"We would like to launch in synchronization with software," commented Toshiba's Keisuke Ohmori. "To launch by Christmas we have to deliver product before Thanksgiving [in the United States]. That's maybe possible for the hardware, in small quantities, but not for software," he added.

In Japan, Matsushita launched its DVD players on the same day as Toshiba. At press time, the company was uncommitted to a pre-Christmas launch. "We are aiming for the end of the calendar year but are not committed on a date," said spokeswoman Deborah Lamascus.

The company will coordinate its launch with availability of software, she added.

Sales in Japan are currently going well, said Ohmori. The company's player is being sold on an advance-order basis in many stores and people are having to wait for machines. There are currently around 10 disks available in Japan and between 20 and 30 are expected to be available by the end of the year. Titles include karaoke, music videos, and movies.

When the company does launch, it will offer two players: one a basic model and the other a more advanced version with extra features. Toshiba sells only one model in Japan.

NEC develops 25Mbps wireless LAN card • TOKYO (NB)—NEC Corp. has developed a local area network (LAN) adapter PC Card that allows wireless transmission of data at 25 Megabits-per-second (Mbps). The card, currently still being worked on in the company's research and development department, will be available commercially later this year. The high speed is achieved thanks to technology within the card that allows it to receive a much clearer signal, less susceptible to noise, and thus capable of supporting a higher speed. The company's V800 RISC high-speed microprocessor is embedded in the card and runs

Continued on page **17**

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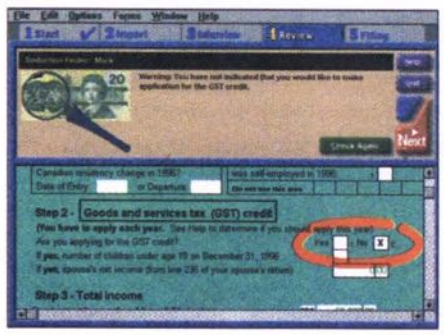

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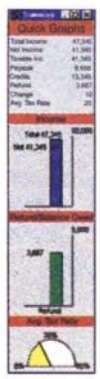

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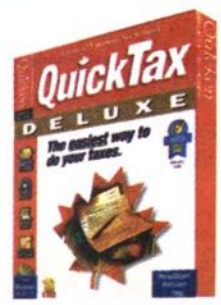

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Volume 10, No. 1, January 1997

WHAT'S NEW

Continued from page **15**

the signal processing in software. This was previously done in hardware which slowed the process down, said an NEC spokesman.

By switching several routines over to software, it was easy to miniaturize the hardware and fit it into a PC-Card, which can slot into most notebook computers. The combination of speed and miniaturization will enable computer users to access full-motion video and videoconferencing, according to NEC, which said a 6Mbps link is needed to support such operations. Around five users could wireless videoconference on the same base station, said the company. Each base station has a range of around 10 m (30.28 ft.).

What's New is compiled by Jeff Evans, Keith Schengili-Roberts, Chris Fisher, Graeme Bennett, David Tanaka and Megan Johnston.

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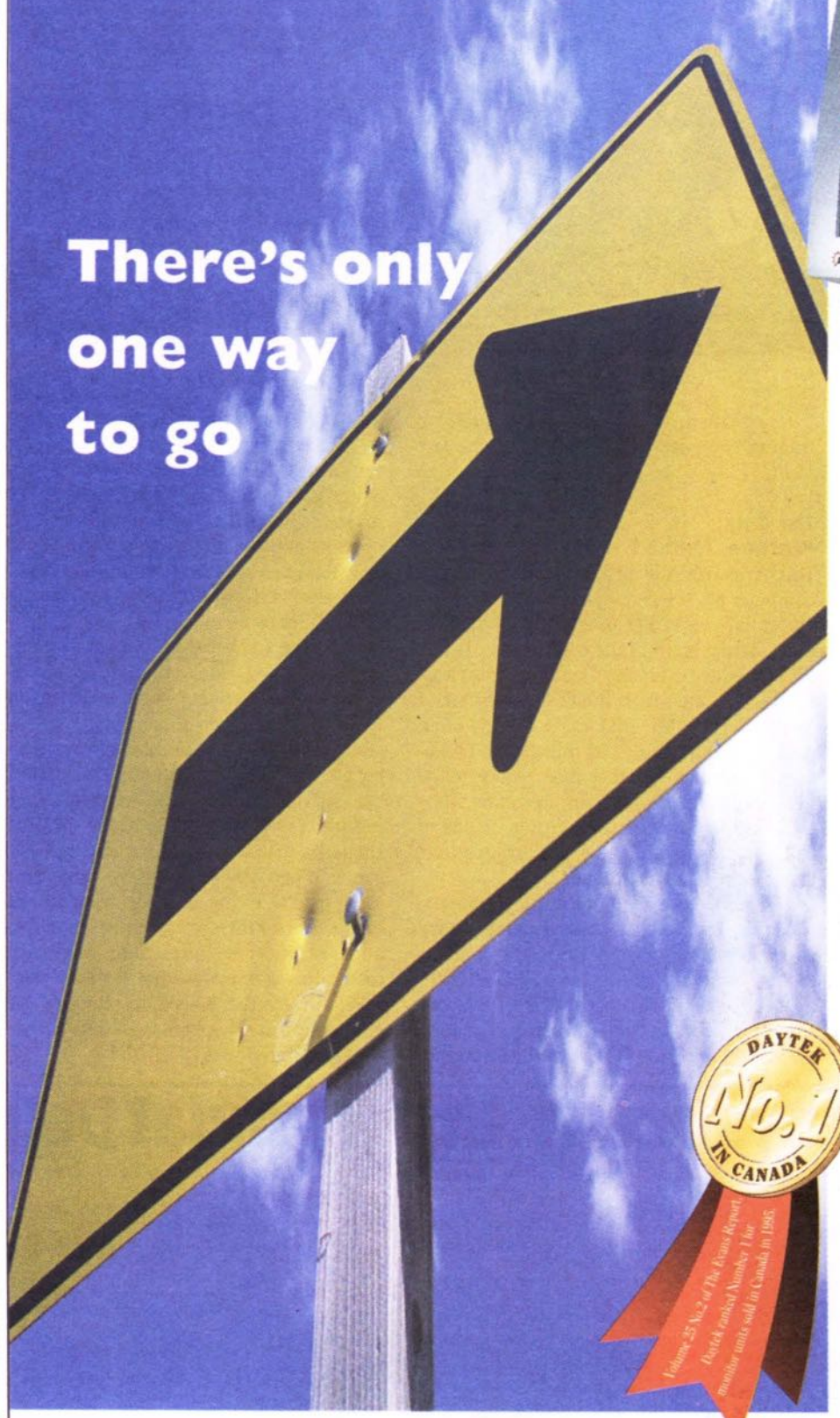

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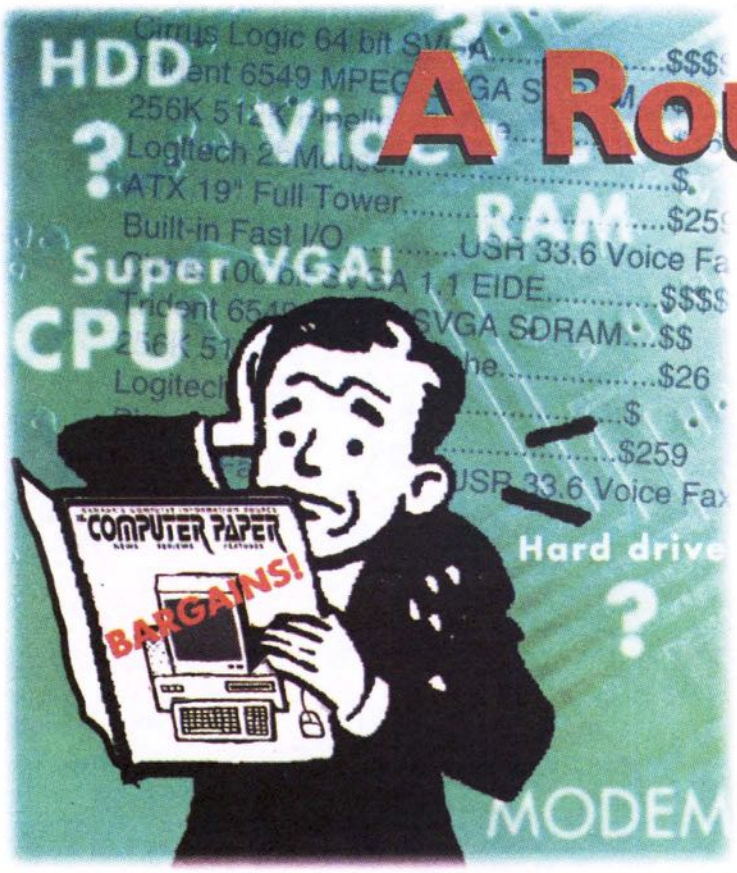

A Rough Guide to Reading Ads

How to break through the jargon to find the best computer deals

BY ROSS MACDONALD

A couple of years ago I wrote a guide to reading computer ads that generated a lot of appreciative feedback from legions of shoppers mired in the maze of choice and lingo that permeated every computer ad and sales pitch.

To no one's surprise, the syndrome continues today. Now, however, quite a bit of the machinery has changed to the point where there's a whole new set of things to learn before venturing forth to buy a computer.

Gone, for example, is the confusion engendered by trying to grasp the differences between five or six kinds of 486 chips. And, if you recall hearing something about a Vesa Local Bus, you can forget that too, because the prominence of the Pentium has introduced at least some kind of standard, chip wise, and similarly dictated the use of the PCI bus on all consumer-oriented computers.

However, the function and number of components required to make a personal computer have remained more or less the same, and even increased to some degree as multimedia capability has become an expected feature.

Here, then, is the new rough guide to reading computer ads, updated for the late 1990s.

The Chip:
Pentium, AMD K5, Cyrix 6x86, etc.
This is usually the first thing listed in any computer ad. It tells you what kind of chip—or central processing unit (CPU)—functions as the actual brain of the computer.

But, where everyone's familiar—or at least thinks they are—with Intel's Pentium brand of chips, the AMD and Cyrix brands often engender some degree of mistrust or confusion despite the fact that there's no genuine need for it. In simplest terms, it can be safely said that all three of these major brands of CPU are compatible, the two competitors being more or less Pentium clones.

Any differences lie in the subtle technological tricks each manufacturer employs to try and grab some segment of the market in terms of increased performance, lower price or both.

It all boils down to technological tricks, apparently, because the basic process of CPU manufacture for the PC market has generally involved a company like Intel releasing a code set for a new chip... say, the Pentium... prior to the chip's introduction because motherboard manufacturers and software developers need to know how to address the chip when it becomes available. That way you can buy software for a new chip on the same day the CPU is released because software makers have had the code for some time prior.

"All the CPU makers have to adhere to [an] established code in order to ensure compatibility. But then they begin exercising little tricks to try and gain some competitive edge [and] most of the performance tweaks used by the various manufacturers are applied to the internal cache," explains Scott Knight, president of Vancouver-based Platinum Upgrades. "A cache is essentially a guessing game. When you're trying to implement a cache you're trying to guess what the next instruction to the chip is going to be, based on all the previous instructions. A write-back cache, for example—which is faster than a write-through cache—is quite simply a better guesser because there are more hits based on the algorithm it uses."

Knight says not all CPUs have a write-back cache at this point "because that technology has to be supported by the hardware and the firmware and the BIOS [binary input/output system]. So it's just not possible for a chip maker to call up the motherboard makers and say they're going to switch to a write-back cache, because that would mean a whole new program of research and development for the motherboard makers to be able to support it."

Cache itself is a complicated business because there are so many different types (write-through, write-back, pipeline burst, etc.) and, as we've just seen, each competing chip maker applies its own technology to designing it. In other words, there's no point in trying to explain them all here. Just remember that "write back" is better than "write through" and "pipeline burst" is better than "write back"... the term "better" is used loosely here to indicate faster when all other factors remain the same.

And a last word about cache. Those

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Complete Your System With a Hyundai DeluxScan Monitor

Brilliant Colour

ESP $329
DeluxScan 14

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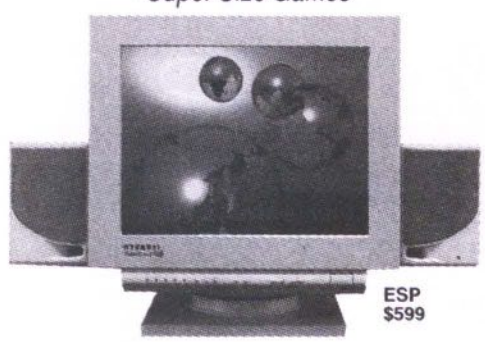
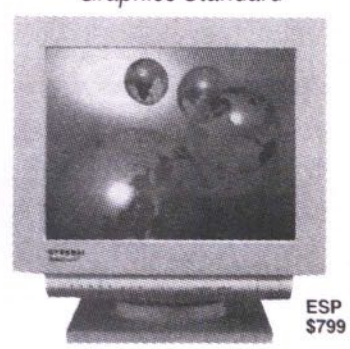

ESP $599
DeluxScan 17MB

Graphics Standard

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DeluxScan 17

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BC - (604) 873-2440 Alberta – (403) 437-6026 Sask/Manitoba – (204) 231-0590 Central Ontario – (905) 305-6197 Eastern Ontario – (613) 831-8555 Quebec – (514) 735-7850

NETCOM CANADA

NETCOMplete

- Netscape Navigator 3.0
- SurfWatch
- McAfee WebScan
- VocalTec Internet Phone™
- Eudora Light
- Shockwave
- Adobe Acrobat Reader
- NETCOM Unplugged
- OnBase DragNet
- Quarterdeck GlobalChat
- Storm EasyPhoto
- 30 days of Internet Service
- Windows 3.1
- Windows 95
- Mac

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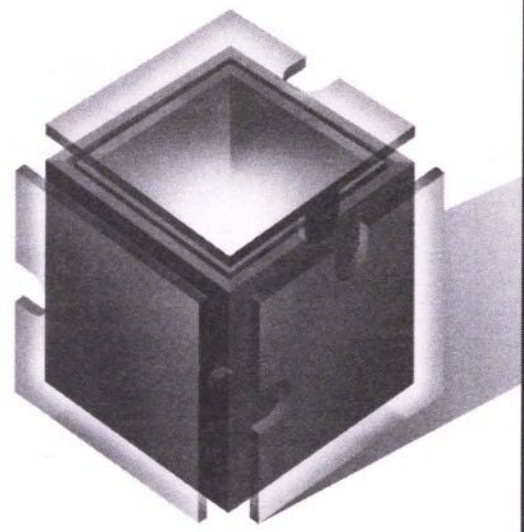
INCLUDES Netscape Navigator 3.0

W WINDOWS

Mac OS

CD ENCLOSED

INCLUDES 30 DAYS OF ACCESS!



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A guide to reading ads

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described so far are "internal," meaning they're built into the CPU itself, which also means they are very small—generally about 16K.

But you'll often see another specification in a computer ad specifying Level 2 (or L2, or secondary) cache, which is an external set of chips built onto the motherboard to work with the CPU in maximizing performance. When L2 cache is mentioned in an ad, you can expect to find either 256K or 512K in a normal consumer-level machine. As with most things computer, bigger is better.

But back to the actual CPU, which is what we're supposed to be talking about here. Whichever brand of CPU is in the machine, the name will be followed by a number which tells the internal speed of the chip as measured in megahertz, or MHz. This is one of those once simple numbers that has been fudged somewhat by newer technology.

The first complication comes from the fact that, since Intel is the big mama of manufacturers, all other CPUs are classified by speed "as if" they were Pentiums. This is called the "P rating." So, for example, a particular AMD K5 chip might have a "P rating" of 166 MHz but have an actual speed of 100 MHz. What the "P rating" tells us is that it claims to be as fast as an Intel Pentium 166 MHz in terms of actual computing.

Dean Whitehair at AMD put it this way: "I think what you're going to see with all the new advanced architectures that all microprocessor manufacturers are going to right now, is that core clock speed is going to become more and more irrelevant—especially for the end user. Unfortunately, right now, they're still measuring CPU performance based on clock speeds. But what we're seeing, for example, is that AMD's K5 with a P rating of 133 has a core clock speed of only about 100 MHz but it performs as fast, or faster, than a Pentium 133."

What's supposed to be appealing about a K5 is that you get that equal performance for a lot less money. But that's a whole 'nuther story we've already looked at in a previous issue of *The Computer Paper* (check out our Web site at http:www.tcp.ca).

Regardless of all that theorizing, it remains true that the higher the clock speed number, the faster the actual CPU—a Pentium 166 is definitely faster than a Pentium 100, for example. What has rendered this once mercifully simple concept more complex, however, is that CPU speed is no longer a reliable indicator of system performance.

In combination with the different types and sizes of internal and external cache, the various access and throughput speeds of different hard drives, the amount, speed and type of RAM, etc., you might just find that a computer containing a CPU of a certain speed actually performs as fast as, or faster than, one with a faster CPU but, maybe, for the same or even less money.

So, hypothetically, a system with an AMD 100 MHz K5 in combination with certain other bits and pieces might outperform another machine with a Pentium 166 MHz inside.

CPU buying tip: The best thing to do here is quite simply have some demonstrations run in the store. Take a CD-ROM with you, for example, and run it on differently based machines. Time how long it takes each system to execute a bunch of random commands. In the end, it won't really matter which brand of CPU is inside the machine or even how fast it's rated—as long as it's made by a major manufacturer. Overall system performance counts more.

RAM

Things get a lot easier at this point. RAM stands for random access memory and, just as with most computer stuff, the more the better. Explaining how memory works would take volumes but all you need to know is that eight megabytes—or MB—of RAM is absotively posilutely unequivocally the smallest amount you can have in a computer if you're going to run today's software with any efficiency. But, with only 8 MB of RAM, you'll find that many things run at a pace that's hair-pullingly slow.

That's because RAM is where a lot of software information is stored for quick retrieval by the computer. When your RAM is full up, the computer has to go back to the hard drive, search for the information it's looking for (how to make italics, for example), read the instructions, then actually do it. In many cases, this can mean waiting several minutes between pushing the mouse button and seeing what you wanted to happen actually appear on the screen. In most cases, though, the delay is more like seconds. But, when you're trying to work or play a game or watch a CD-ROM, delay after delay will drive you nuts!

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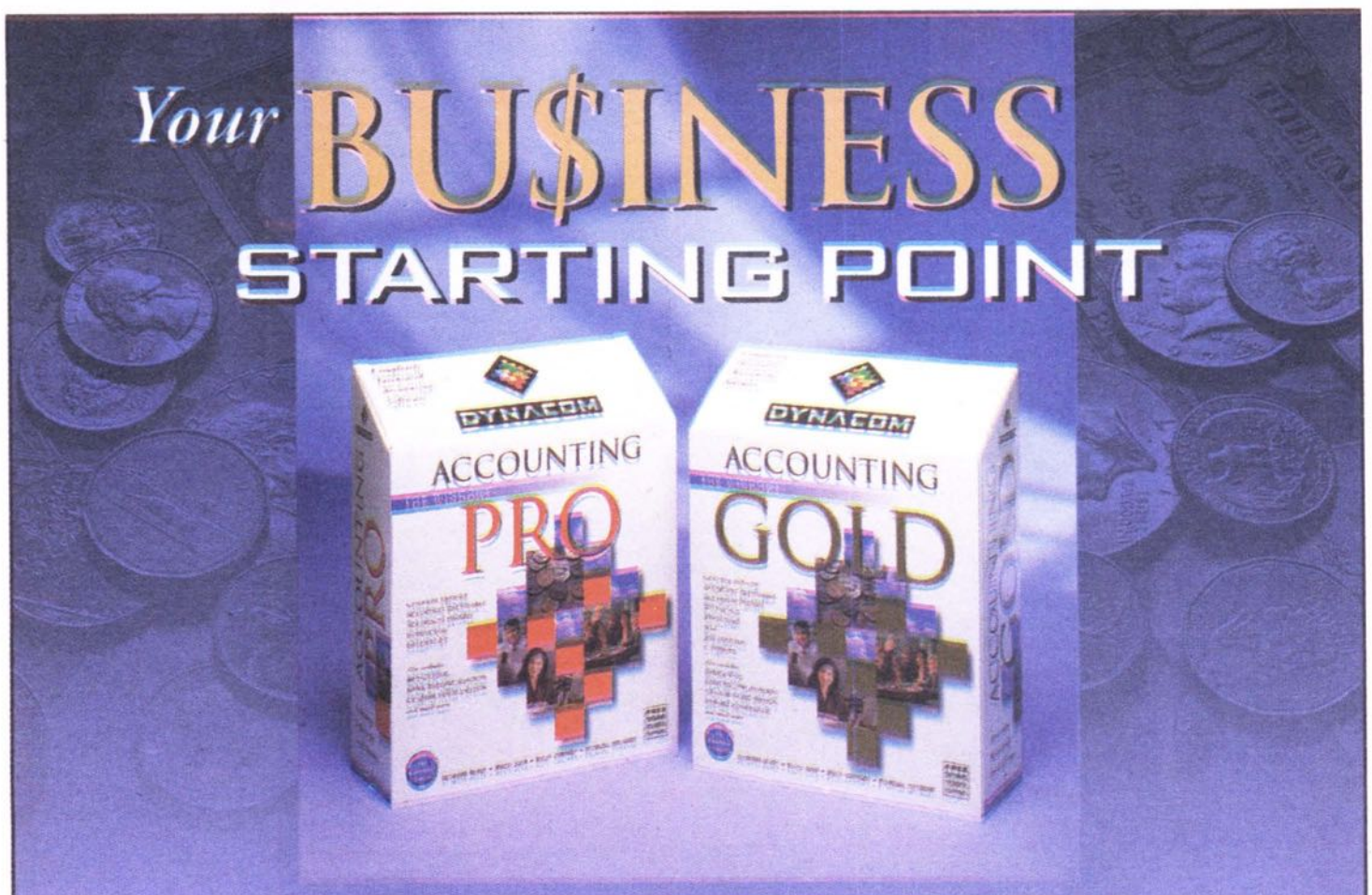

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PVT/M NOTEBOOKS W/PENTIUM ® PROCESSOR (8 MB, 10" DSTN CLR)			
Hard Drive	1gb	1.3 gb	2 gb
PVT/M P-100	$2703	$2859	$3084
PVT/M P-120	$2718	$2875	$3099

PENTIMEDIA NTBKS (8 MB RAM, 11.3" DS CLR, & 6X CDROM			
Hard Drive:	1gb	1.3 gb	2 gb
P-120, Intel Pentium	$2731	$2877	$3087
P-133, Intel Pentium	$2825	$2971	$3181
P-166, Intel Pentium	$3025	**$3171**	$3381
Upgrade to 10.4" active matrix display			**$313**
Upgrade to 12.1" active matrix display			**$710**

NOTEBOOK FEATURES

	PVT/M	PENTIMEDIA/CD
Intel CPU Options	P-75 to P-120	P-75 to P-166
Int. CPU L2 Cache	256k	256k
Base / Max RAM	8 mb / 40 mb	8 mb / 32 mb
Local Bus Video RAM	VLB 1 mb	PCI 2 mb
Max. Removable HDD,	2 GB	2 GB
Floppy Drive	1.44 mb	1.44 mb
DSTN Colour LCD	10", 640x480	12.1", 800x600
External Monitor	simultaneous, 1024x768	
Ports	1 parallel, 1 serial, 1 external video port	
Two PCMCIA slots	Type II & III	Type II & III
SVGA, PCMCIA Drivers	Included	Included
Pointing Device	Pointing device	Trackpad
Battery Type	NiMH	NiMH
Sound	16-bit, speaker, microphone	
Joystick	No	Yes
CD-ROM	Optional external	built-in 6xCD-ROM
Carry Case, AC Adaptor	Included	Included
Dimensions (inches)	11.3 x 10 x 2.2	11.7 x 9.9 x 2.2
Battery Life w/power mgmt	2 - 3 hours	approx 1hr with cdrom

Ultinet P-100 Performance Package
Awarded Editor's Choice
The Computer Paper, December, 1995

ULTIMATE PACKAGE

COMPARE: WHY PAY MORE & GET LESS

Processor	Intel Pentium or Pentium Pro Processor
External cache	512k fast 7ns pipeline burst (Pentiums)
Chipset	Adv Intel TRITON HX (better than VX) or 440Ppro
RAM	fast 32 mb EDO ram
Video card	Diamond OEM **S3 Virge 3D graphics** & Mpeg
Video memory	The only one with true 50ns 2mb EDO ram
Mtr 17" Intlivw	**.26dp, UVGA 1280x1024, 75hz** Hitachi tube
Sound	32bit (16bit rec/16bit plybk true duplex, wavetable)
Voice/Fax/Mdm	33.6 full telephony, internet ready
Hard drive	2.5 GB enhanced IDE
Hard disk cache Controller	**16mb realtime diskcache**
CD-ROM drive	Internal 8x enh IDE
System BIOS	Latest Award Plug & Play
Plug 'n' Play support	Yes
Opr system	Win 95, full CD ver with manuals, installed
Extras	100 W Speakers, microphone, Wintrack keyboard
Software included	31 CD titles incl. encyclopedia
Warranty	2 years Canada wide P & L system warranty

PRICING

P-133 Pentium ® processor, 512k p.b. cache	$2718
P-166 Pentium ® processor, 512k p.b. cache	$2924
P-200 Pentium ® processor, 512k p.b. cache	$3137
P-Pro-180 Pentium ® processor, built-in cache	$3198
P-Pro-200 Pentium ® processor, built-in cache	$3793
Upg to Matrox MYSTYQUE with 2mb SGRAM	$195

LEASING RATE $37 per $1000, 12-36 months

NOTEBOOK UPGRADES & ADD-ONS (AT TIME OF PURCHASE)

Each mb of 70 ns fast RAM (e.g. 8 more mb only $120!!WOW!!)	**$15**
Ntbk PVT/M with Pentium 10" DSTN to 9.8 active matrix LCD	$389
Ntbk Pentimedia /CD 11.3" DSTN to 10.4"/12.1" active matrix	$313/10
MS-DOS 6.22 , full OEM package disks and manuals	$59
Windows 3.1 / Win. 3.11 with Workgroup (OEM)	$59/89
Windows 95 full package on CD with manuals (OEM)	$135
Extra Removable HDD case/external hard drive	$60/Call
PCMCIA 14.4 fax/modem (with notebook only)	**$110**
PCMCIA 28.8 fax/modem (with notebook only)	**$245**
PCMCIA Ethernet adaptor 10 BT	**$95**
PCMCIA SCSI adaptor	$389
PCMCIA 28.8 Fax/Ethernet 10BT Combo	$595
External 4X CD-ROM, parallel	$325
External 8X CD-ROM, parallel	$470
External Parallel 800 mb Tape Back-up	$285
Upgrade Your Old Notebook 2.5" Hard Drive New HDD's:	
520/810 mb	$250 / 395
1.3 gb / 2 gb	$598 / 865

We do ram & hdd upgrades for other notebook brands as well.

EVERY ULTINET COMPUTER PACKAGE INCLUDES

Intel CPU Options	P-100 to 200 MHz Pentium ® processor P-200 MHz Pentium Pro ® processor
Motherboard	**The best ASUS Triton HX, rated #1** for P133-P200
BIOS/ Chipset	Intel Triton FX/VX & **HX ASUS (superior)** as specified
Cache	512k pipeline cache on P133-P200, Internal on Ppro
High Performance	Yes, Triton chipset
Hard Drive & controller transfer mode	<11 ms, EIDE M4
HDD controllers	PCI enhanced dual channel support up to 4 devices
Floppy Drive	1.44 mb
Low radiation/energy monitor	15" or 17" Monitor as required*
Video Card	1 mb PCI or **S3 Tri 64V+, or S3 Virge 3D /w true EDO ram**
Sound Card, Speakers	Wave32 (16/16 bit full duplex, 2 ext speakers
Enhanced keyboard & mouse	Win95 104 keys enhanced & 400 dpi
Case, power supply	Enhanced deluxe tower, 200 Watt
Serial/ Parallel Ports	2x16550 enhanced serial, enhanced parallel
Multimedia Option	Wave 32 sound with wavetable, 8X, 10X or 12X CD
CDs Included	30 titles (educational & entertainment including Comptons Encyclopedia)
Warranty	2 years parts & labour system warranty

*Entry Level Performance Package does not include monitor or CD titles.

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5. All systems modifiable to your exact needs, toll free Canad wide support
6. Compare! Our volume buying power saves you at least 9-15% with no compromise quality & service: EDO RAM, 512k pb cache, HX chipset etc
7. 24 hour regular and automated sales and technical support.
8. Our P-133 to P-200 system motherboards use Intel's latest Triton HX chipsets. Unlike our competitors we use genuine 256k and 512k pipelined burst mode cache. We do not use M520 mbd's with dummy surface-mounted write back cache to save costs & lose 25% system speed! Our S3 video cards are the best as we use true 50ns EDO ram for video memory, as well as fast EDO ram for the entire system . Our Triton motherboard was featured in our 75 MHz & 100 MHz Pentium systems, that according to *The Computer Paper*

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ENTRY LEVEL PERFORMANCE PACKAGE

16 mb RAM (true 64-bit with 2x8mb 72-pin SIMMs), 1.6 GB EIDE HDD, Intel-Triton chipset, 8xCD-ROM, true 16-bit surround sound, 104 enhanced keyboard, 1 mb 32-bit PCI video, full screen MPEG, mouse, fast 256k pipeline cache (P133-P200) incr speed by 13-17%, multimedia spkrs

P-120 Pentium ® processor, 256k pipeline cache FX	$1067	$38/mth
P-133 Pentium ® processor, 256k pipeline cache FX	$1164	$41/mth
P-166 Pentium ® processor, 512k pipe cache HX	**$1369**	**$50/mth**
P-200 Pentium ® processor, 512k pipeline cache HX	$1583	$57/mth
P-Pro 180 Pentium ® processor w/built-in cache	$1698	$63/mth
P-Pro 200 Pentium ® processor w/built-in cache	$2298	$86/mth
Add 14" .28dp monitor to the above		$298
Add 15" Intelliview .28dp digital monitor to the above		$375
Upg 1 mb PCI to **Bullet S3 64V+** video with 1 mb **50 ns EDO RAM**		$40

PERFORMANCE PRO PACKAGE

16 mb EDO RAM (true 64-bit RAM, 2x8mb 72-pin SIMMs), 1.7 GB EIDE HDD, Intel-Triton superior HX chipset **ASUS (rated #1)mbd** (better than VX) with P133-P200, 8xCD-ROM, Blazer 33.6 VFX telephony modem, **Wave32** full duplex snd with wavetable, 104 enh. keyboard, **Bullet S3 64V+** video (Diamond OEM) with **1 mb 50 ns. EDO RAM**, FS MPEG, fast 512k cache (P133-P166) boosts speed by 13-17%!, 30 CD titles, Comptons Encyclpdia, multimedia spkrs & 15" .28dp NI digital monitor.

P-120 Pentium ® processor, 256k pipeline cache FX	$1584	$58/mth
P-133 Pentium ® processor, 512k pipeline cache HX	$1681	$60/mth
P-166 Pentium ® processor 512k pipe cache HX	**$1886**	**$70/mth**
P-200 Pentium ® processor 512k pipe cache HX	**$2100**	**$77/mth**
P-Pro 180 Pentium ® processor w/built-in cache	$2160	$82/mth
P-Pro 200 Pentium ® processor w/built-in cache	$2756	$105/mth
UPG 15" to 17" .26dp Intelliview NI mtr & 2mb S3 64V+ video		$451
Upg 16mb EDO sys ram to 32mb EDO (8mbx4 or 16mbx2)		**$90/119**

SPECIAL EDITION II PACKAGE

16 mb EDO RAM (true 64-bit RAM, 2x8mb 72-pin SIMMs), 2.5 GB EIDE HDD, Intel-Triton superior HX chips **ASUS (rated#1)mbd** (better than VX) with P133-P200, 8xCD-ROM, Blazer 33.6 VFX telephony modem, **Wave32** full duplex sound with wavetable, enh Wintrack 95 keyboard, **Bullet S3 64V+** video (Diamond OEM) with **2 mb 50 ns EDO RAM**, FS MPEG, fast 512k cache (P133-P200) boosts speed by 13-17%!, 30 CD titles, Comptons Encyclpdia 100 Watt premium speakers, **17" Intelliview .26dp NI UVGA (1280x1024)** 75hz monitor, (Hitachi Japanese tube) & hi-quality microphone.

P-120 Pentium ® processor 256k pipeline cache FX	$2111	$78/mth
P-133 Pentium ® processor, 512k pipeline cache HX	$2208	$80/mth
P-166 Pentium ® processor, 512k pipe cache HX	**$2413**	$90/mth
P-200 Pentium ® processor, 512k pipe cache HX	**$2627**	$97/mth
P-Pro 180 Pentium ® processor w/built-in cache	$2688	$102/mth
P-Pro 200 Pentium ® processor w/built-in cache	**$3283**	**$125/mth**

MIDTOWER SYSTEM UPGRADES & ADD-ONS:

Upgrade regular 16-bit to WaveTable 32 sound card	$31
Upgrade to Wintrack 95 keyboard with built-in trackball	$49
1.6 GB to 2.5 GB HDD	$126
IDE 1.6 GB enh ide to 2 GB SCSI HDD	$381
IDE 1.6 GB enh. HDD to SCSI 4 GB HDD	$938
Adaptec 2940 / 2940 UW PCI SCSI controller with cables	$289 / $410
15" to Mag DX15T 15" .25dp NI UVGA monitor, Trinitron CRT	$189
15" to Sony 15" 15SFII .26dp NI UVGA monitor	$319
15" to Intelliview DH17" .26dp NI OSD UVGA,1280x1024 82khz mtr	$421
15" to Viewsonic GT770 17" .25apg NI 1280x1024 mtr, Trinitron CRT	$685
15" to Viewsonic 17PS 17" .25dp NI 1600x1280 Trinitron CRT	$785
Bullet S3 64V+ (S3 765 chipset, Diamond Stealth OEM) video card with true **1 mb 50 ns EDO RAM to 2 mb 50 ns EDO RAM** (OEM)	$30
Bullet 1 mb 50ns EDO RAM to 2mb S3 Virge 3D graphics card	**$78**
Bullet S3 64V+, 2 mb 50 ns EDO RAM to Matrox Mystique 2 mb	$245
16 to 32 mb RAM (fast 72-pin, using 8mbx4 or 16mbx2)	**$79/99**
5 to 100W speakers (AC adptr, bass/vol & surround controls)	$69
8xCD-ROM to 10X, or 12X	$35/85
MS Home Bundle (Encarta, Dangerous Creatures, Works, Entertainment)	$98
Generic 14.4/Blazer 33.6 voice/fax/modem	$45/88
USR Sportster 33.6 fax/modem (non voice), upg to 56kbs	$239
USR 33.6 voice speaker-phone/fax/modem, upg to 56kbs	$259
800 mb TRAVAN internal tape back-up drive	$197
TV Tuner Card (watch TV on your monitor)	$198
Windows 95 with CD (OEM) & manuals (fully installed & configured)	$135

MOTHERBOARD SPECIALS

60/66 MHz motherboard, 256k cache, Acer chipset, w/o cpu **$72**
Triton Chipset VX(III)/HX(II) mthrbrd: **$149/$179** (incl fast 512k pb cache) 75-200 MHz, enh parallel port, 2x16550 UART, 2XEnh IDE, MODE 4
P-Pro, Triton 440FX chip (Natoma): **$298** (single CPU) **$595** (dual CPU)
SIMM MEMORY(EDO): 8mb 72-pin $45 16mb 72-pin $98

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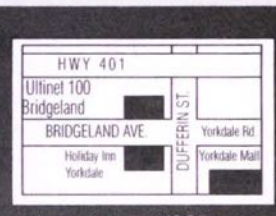

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A guide to reading ads

Continued from page **20**

Just to mix things up a little, we're now presented with the option of something called extended data out (EDO) RAM. This is a quicker type of RAM than the regular old dynamic RAM (DRAM) for highly technical reasons and can, according to some estimates, boost performance by four to 15 percent. However, EDO RAM must be supported by the motherboard inside the machine.

Many computers now come with 16 MB of RAM, which is optimum for running most software under Windows 95. Moreover, you can always add more RAM at any time and prices have dropped to such a low level ($10 to $20 per megabyte) that there's no excuse for scrimping in this department. If you're serious about buying a system that comes standard with 8 MB RAM, you can probably—and should try to—swing a deal for eight more.

RAM buying tip: You can never have too much RAM. But there's a certain point at which most people won't see any benefit (usually above 20 MB with Windows 95). So don't go crazy unless you have some very specific RAM dependent applications in mind.

Hard drive or hard disk or HDD

The hard drive is the machine that stores all of your software and any stuff you create. It's a direct cousin to the floppy diskettes you see people stuffing into slots with the difference that it's non-removable and capable of holding a lot more information. All personal computers come with a hard drive. All you need to do is get the biggest one you can afford.

Seeing 810 MB HD in an ad tells you that the hard drive can hold 810 megabytes of information. In terms of typing, that's about 250,000 pages. Sounds like a lot. But not a lot of computer stuff consists of simple text. It might take any of us a lifetime to generate 810 MB of word-processing files, but the software package that lets you create those files could quite easily need 50 or 60 MB just to fit in the computer.

Just to give you an idea, on my computer the Windows 95 directory alone holds 129.7 MB of stuff, and that doesn't include all my software applications or all the files I've created. And I should emphasize, too, that my personal storage requirements are quite modest compared to most.

In everybody's favor, however, hard-drive size is becoming less and less of a concern for most system buyers as hard drives have become exceptionally inexpensive on a price per megabyte basis. Purchased separately, the price of a 1.6 GB (gigabyte) hard drive (it can hold 1,600 MB of data) just squeaks over the $300 mark. That means most system builders will throw in a reasonably proportioned device—usually 810 MB or, if you're lucky, 1.6 GB—while keeping the whole system price down. Unless you're really planning on stocking up on resource hungry software—or creating huge, resource hungry graphics files—1.6 GB or more should stand you in good stead until it's time to move on to yet another computer a depressingly brief couple of years down the road.

Good for us too is the fact that, in one of those many technological paradoxes, these new, bigger hard drives are actually much quicker at storing and retrieving information than the older, smaller ones. So we're getting a boost in system performance along with a lot more storage space for considerably less money than two years ago.

Hard drive buying tip: Go for the biggest hard drive you can afford. Again, you can probably swing an upgrade deal with any enthusiastic sales person at the time you're hitting them up for more RAM. Remember, you can never have too big a hard drive but, as with RAM, there is a personal point of diminishing return.

PCI bus

Bus was a very complicated thing to explain when 486s were de riguer because there were several different types you might encounter inside a given machine. But all that's been made simpler now because all new computers use Pentium—or Pentium-like—CPUs and all motherboards use the PCI bus because it was designed to maximize performance from those chips.

In simplest terms, the bus is really just a bunch of wires that carry the electrical information back and forth between the chip and the rest of the stuff in the computer. And bus speed, like most things computer, makes a big difference when it comes to performance. You don't really have to know the following information, but I'll throw it in for those who are interested (everybody else can skip a few paragraphs):

Regardless of the speed of your CPU, it communicates to everything else in the computer through the bus. And, just as with CPUs, bus speeds are measured in MHz. Now, this is where it gets a bit tricky: all the newer motherboards have jumpers that allow you to set the bus speed at 25 MHz, 30 MHz or 33 MHz. And when you buy your system, these jumpers will be set to optimize whichever speed of CPU you're getting (100 MHz, 133 MHz, 166 MHz, etc.). However, where the chip actually meets the bus, there's a thing called a multiplier for addressing the CPU's clock speed, and these can be limited to 1.5x, or 2x or 3x depending on the quality and brand of the motherboard itself.

If your motherboard has a 3x multiplier, your computer will be upgradable at any time all the way up to a Pentium 200 or equivalent CPU. A 1.5x or 2x multiplier will limit your upgrade options. Therefore, if you anticipate an upgrade of your CPU down the road—and that's just about a given these days—make sure you get a clear answer from the retailer about just how upgradable your machine is going to be. They might not know all the technical ins and outs, but make sure you know exactly what the motherboard can accept so there won't be any nasty surprises when the time comes.

All of which helps explain why the relationships between machines of different speeds isn't linear. Put more simply: when all other factors are constant, a Pentium 166 machine will likely be more than the arithmetically expected 66 percent faster than a Pentium 100 because it has the benefit of faster CPU communicating through a faster bus.

But back to our story...

All your internal cards—video, sound, hard drive controller, SCSI controller, etc.—communicate with the CPU by sitting in slots connected directly to the bus. So, the faster the bus, the faster or more efficiently all those components will operate.

PCI (peripheral component interconnect) has been specifically designed to take advantage of the Pentium type chips' super fast 64-bit elements. And it has the additional advantage of employing what everybody calls "Plug and Play," which means that any PCI card you put into a PCI slot will be recognized by the computer automatically... no screwing around with configuration files and the like (at least in theory).

But, not all the expansion slots inside your computer are going to be PCI because many cards just don't need the kind of speed PCI facilitates. A faxmodem, for example, won't perform any faster in a PCI slot. That's why, if you ever look inside your computer, you're going to see both PCI slots and what are called ISA (that's industry standard architecture) slots on the motherboard. ISA is the most common type of interface for many kinds of common expansion cards—like sound cards and faxmodems—so those devices are wired up to work in the ISA slots anyway.

Buing tip: Bus type is no longer a worry so you can ignore any notation in the ad that specifies PCI because there isn't any alternative anyway. However, bus speed will become an important factor in future CPU upgrading, so try to get a motherboard that can accept any CPU speed up to 200 MHz.

VGA or SuperVGA (SVGA) color

This term is compu-code for what amounts to two separate items in your system—the monitor, and the video card (sometimes called a graphics or video-graphics card) inside that translates electro-stuff into pictures and text for you to look at.

SVGA (super video graphics array) is better because it can give higher resolution images. But not everybody takes advantage of that, so the more economical VGA (video graphics array) is still used in some machines though it's gradually disappearing to the point where you likely won't be offered anything other than SVGA on a new system.

A more important question to ask is how much video RAM is on the video card inside the machine. These cards contain their own version of RAM and video RAM is responsible for speeding up the process of translating meaningless electronic bumpf into pictures and text. It also dictates the limits of how many colors are possible at what levels of resolution (higher resolution requires the processing of exponentially larger amounts of information to put nice pictures up on the screen and move them around).

But monitors and video cards are where retailers most like to go cheap because it's the best area in which they can make big profits. It's unlikely that a bargoon system will sport the best representative of either item though even the cheapest these days are as good as the mid-range of only a few years ago.

Video card buying tip: You want at least 1 MB of RAM on the video card but 2 MB is better. Some cards will hold 4 MB but they're much costlier and you have to be a real specialist to be able to make use of their capabilities. An ideal situation for most is if the video card comes with 1 MB of RAM but has slots on it to take one more megabyte. That way you can add more later if you want.

Monitor (included or, most likely, not)

You know what it is, but do you know how it works? There are a lot of technical things to consider in monitors, but most name brands are just fine guts-wise. As far as you're concerned, the "dot pitch," the picture size, and whether the monitor is interlaced (int) or non-interlaced (ni) are most important.

Dot pitch tells you how small the individual dots—or pixels—are that make up the screen, and the smaller the number here the better. A large dot-pitch value, 0.38 for example, generates what you'd generously call a fuzzy picture. A dot pitch of 0.28 is what you should look for. It yields a clear, sharp picture.

Interlaced versus non-interlaced is more complicated. An interlaced image is one that's drawn on the screen by two passes of the picture tube's electron gun (as opposed to a single sweep with a non-interlaced image). The gun hits every other horizontal line on the first pass, and then fills in the other lines on the second pass. This can cause a tiny flicker, which is virtually invisible. However, after about half an hour at the computer you'll mysteriously feel like your eyeballs are falling out. Even non-interlaced monitors might "go interlaced" at higher resolutions, but since few people use those, you get a nice, clean picture at normal resolutions because the entire image is created on a single pass of the electron gun. When it comes right down to it, just remember this: interlaced bad, non-interlaced good. Unfortunately: interlaced cheap, non-interlaced non-cheap.

That said, interlaced monitors are becoming more and more rare because they're just so darned hard to sell in the face of falling non-interlaced monitor prices.

Finally, there''s picture size. Just like a TV, it's measured diagonally. But manufacturers got together somewhere and agreed to measure the entire picture tube size, not the size of the picture. Good monitors disguise this by putting a mask over the front of the tube so your image seems to fill the screen edge to edge. But if you measure what you see, you'll find that your 17-inch monitor is only about 15.5 inches across, your 15-incher is about 14 inches and your 14-inch monitor is closer to 12 inches.

Again here, the bigger the better. Fourteen-inch monitors are really cheap now, even good quality ones, because it's generally accepted that 15 inches is the minimum size for reasonable computing comfort. Of course, bigger is better, but the price curiously rises exponentially in relation to screen size. A really good 15-inch monitor might set you back $650 but an equally good 17-inch model could be $1,200 or more. That's $550 for a mere two inches more!

Monitor buying tip: The monitor is what you're going to be staring at during virtually every hour you spend in the front of the computer so don't start going miserly here. Fortunately, most systems come with something reasonable these days so you can focus more on watching out for a bad monitor as opposed to searching for a good one.

Multimedia, CD-ROM ready, MM package (or something)

Just about all computers for sale these days are multimedia ready and most of the components used are of a quality good enough for general consumer applications. Generally that means you get a 6x or even 8x CD-ROM drive these days (that's good), a sound card of

Continued on page **24**

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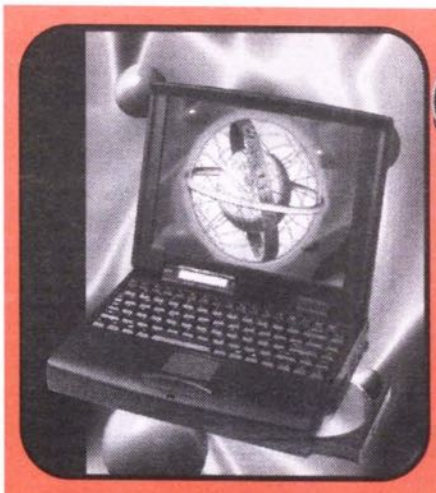

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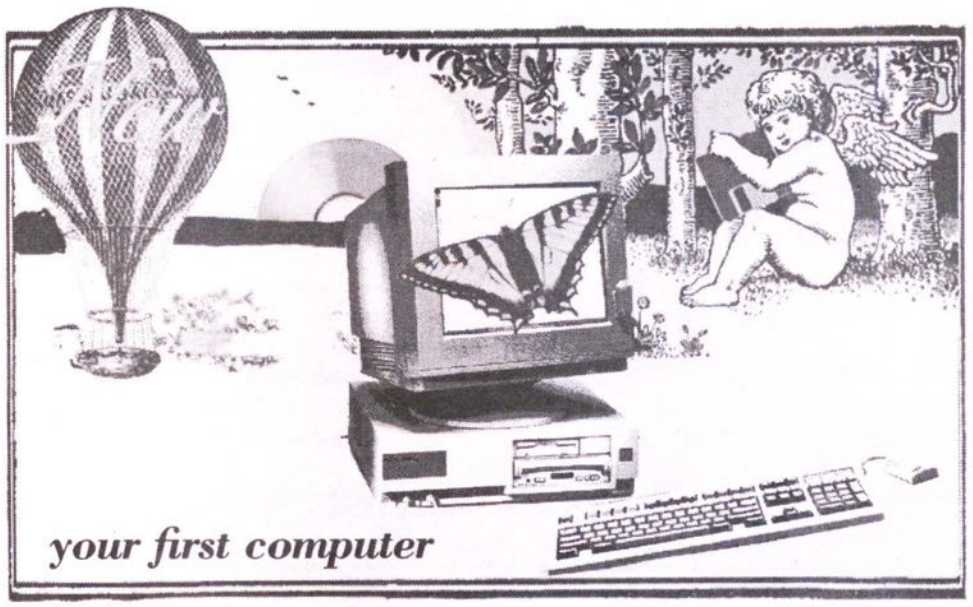

That's why they call it a personal computer

BY JEAN ALLEN-IKESON

Imagine that you are a 15th century monk in an isolated monastery with a "treasure" of 30 books. Outside of prayer, these books are your world. A magician comes to visit and casts a spell. You are thrust into one of today's book superstores with not 30 but 5,000 volumes filled with photographs, maps and words you have never heard or read. When you purchase your first computer, you are that monk.

Your computer is like the physical store that contains those books. It is a tool with which software and the Internet come alive, offering as revolutionary a change in your world as the monk experienced in his. Software development and access to information through channels such as the Internet have come as far in 20 years as book publishing has in 500 years. Just as there are volumes on nearly every subject in the bookstores, there are software products or Internet sites on a myriad of topics.

Confused by the technology? You have a right to be, but the rewards can be awe inspiring if you take the time to map out the territory.

A portal on the world at large

So what is this Internet stuff, and the Web and e-mail people keep talking about? The Internet is like a large county library system with numerous satellite libraries linked by computer—but on a vastly larger scale. Instead of looking in the card catalogue to see what books are available, you can search for people and their interests and activities as well. On the Internet, you'll come into contact with people with ideas to share, skills to test or questions that need answering—perhaps by you.

Whatever your waking activities—from work, home or hobby—there are people around the world with the same interests who you can connect with on the Internet.

It's the people, not the technology, that makes the Internet so terrific. You will find people who are the antithesis of the violence and anti-social behavior you see on the news every night. You can get help to find an antique car part, a quilt pattern, help your kids find out about an obscure village in

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A guide to reading ads

Continued from page **22**

some sort (hopefully a 16-bit SoundBlaster compatible) and a couple of really crappy speakers—all installed and ready to go.

One of the newer specs to come along, though, is something you may see in an ad that refers to MPEG. This is a video acceleration technology that can be implemented either as hardware (chips on the video card) or software (not as good). Essentially, MPEG is a technology that helps eliminate any jerkiness in your computer video. When configured properly with MPEG, your CD-ROM videos should run as smoothly as if you were watching TV. MPEG isn't yet standard on every machine but it's common enough that you should be able to find lots of systems that include it.

Multimedia buying tip: Don't expect to hear brilliant speakers but you should otherwise be getting a 16-bit SoundBlaster compatible sound card and a minimum 6x CD-ROM. If anything describing the sound card mentions WaveTable synthesis, that's good: it means there are digital samples of real sounds built into the card (as opposed to digital reproductions) so you get much truer reproduction from software that looks for it—MIDI stuff, music composition software, many games, etc.

Faxmodem

Things just keep getting better and better for us. Though not in every new computer, a faxmodem is included with so many you might as well get one in your package too. A faxmodem allows you to plug your computer into the telephone line and send and receive faxes, or dial into online services like Compuserve, or into the Internet. So, if you plan to explore the Internet, you need a faxmodem.

Faxmodem buying tip: ...all you have to do is make sure the faxmodem you're getting is either a 28.8 Kbps (kilobits per second) or the newest 33.6Kbps speed. Some of the current luxury models include voice functions (mail boxes, telephone answering machine capability, etc.) and other telephony features. Those are nice things to have but they'll likely be a bonus found only in higher end systems. Most people don't need or use most telephony features anyway because they mean leaving your computer on 24 hours a day.

"Includes $1,000,000 worth of software"

When we last went through this exercise, software bundles were highly variable and equally negotiable to some degree. These days, however, with the pre-installation of most or all of what you're going to get, there's little room for barter.

However, though all computer systems come with something, you're going to find there's a big (read: BIG) discrepancy between what software comes with different brands and sometimes even different models of the same brand.

Software prices haven't followed their hardware counterparts and remain relatively expensive, so you might carefully consider what you want to use your computer for and look for a system with a bundle that best accommodates that. I wouldn't make a decision to purchase a system based on the software bundle, but there's enough variation out there that you should be able to get a system that suits your needs with an equally accommodating parcel of goodies.

Software bundle buying tip: Make sure you're getting current versions of everything being offered. And make sure you get all the manuals, packaging and registration cards. The least you should expect these days is to have Windows 95 and/or Windows 3.11 already installed and running (that saves you a couple of hundred dollars right there) along with separate software and utilities for all your bits and pieces (faxmodem, sound card, video card, etc.). Also, some computer companies now pre-load all the software and provide a backup on a single CD-ROM. That's okay. The CD-ROM will have an official registration of some sort that covers everything so you won't be abandoned by the service numbers. One final reminder: "$1,000,000 worth of free software" that you can't even give away, let alone use for something productive, ain't no bargain.

Warranty

It's strictly buyer beware, buddy. Generally, you can expect the cheapest package price to have the worst warranty. You pay a premium to buy from those small computer specialized stores, but you'll be glad you did when... I mean if... you have any problems. And don't think you won't. Computer problems rank right up there with death and taxes. Even if all the hardware is working properly, software can drive you nuts.

Don't expect the salesman at "Mega Warehouse" to help you, or even know how. He'll just tell you to bring your machine back so he can send it on an all-expenses-paid, 12-week vacation to Siliconia.

Instead, be sure to establish a good relationship with the shop where you buy your stuff. You'd be surprised how many problems can be fixed during a 10-minute phone call with somebody who knows what they're selling... and backs it up.

Some general tips before you go shopping:

1) There's no point in waiting "another few months" to get the latest and greatest because you'll end up never owning a computer that way. The latest and greatest is already in the final stages of development when the newest machines hit the shelves.
2) Always buy the best and fastest computer you can afford. I've been told a jillion times that, "All I need it for is some word processing and to play a few old games," only months before I get the inevitable call: "Is there any way I can make it go faster... without spending too much money?" or "I wanted to put MicroX SuperX on my machine but it says there's not enough RAM (or hard drive space, or...)."
3) Don't let a salesperson snow you with lingo. That's the primary reason for me writing this article. Be sure you understand the capabilities of the machine and get a clear explanation of its expandability for future upgrades to virtually any component. This may seem premature but in all likelihood it's not.

Some handy questions

Keep these in mind when you're in the store (in no particular order):

1) Am I getting an 8 bit or 16 bit sound card? Is it SoundBlaster compatible?
2) Am I getting the latest versions of the software and do I get the manuals, packaging and registration cards? Are they installed and running or do I have to do that myself?
3) What's the warranty on the computer? Do you service it on-site or send it out? Can I call you if I have any questions? Do you have a guaranteed turnaround time for fixing and returning my computer if it needs repair? Do you have a loaner policy (free or otherwise) if you have to keep my computer longer than (whatever the "guaranteed" turnaround time is)?
4) Can I upgrade the CPU, and how fast a CPU will it take when I do upgrade?
5) How much RAM can the motherboard hold? What types of RAM will the motherboard support?
6) How much RAM is on the video card? Can I add to that at any time? If so, is the video RAM proprietary? How much does video RAM cost? ❑

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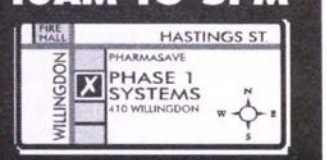

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A personal computer

Continued from page **24**

France, watch a comet's progress in real time, share parenting ideas or locate the names of great grandfather's ancestors. (*But let's not forget that the Internet has its darker, seamier side too. Whatever you find in the world, warts and all, you'll likely find a correlate for on the Internet.*—Ed)

Getting hooked (up)

How do you get all this? Buy a computer with a modem, and subscribe to an Internet service provider (ISP).

A modem is a piece of equipment inside your new computer (you can also buy an external modem), which connects to a telephone line and allows your computer to send—and receive—digital information to other likewise-equipped computers across the telephone line. An ISP is connected to the global interconnected network of networks, called the Internet. When you connect to your ISP with your modem, your computer becomes a part of that network.

24-hour mail service

One service available with an Internet connection is e-mail, which is short for electronic mail.

So what is so good about that? First, outside of what you pay for an ISP connection (about the same as basic phone service), there are no stamps to buy or lines to stand in at the post office. Just like a letter, you have an address such as "anyone@tcp.ca"—which is short for a person named "anyone" at "tcp," or *The Computer Paper*, in "ca," or Canada. Enter that, then type your note or letter, click a key on the keyboard and poof! it's sent. About 15 minutes to an hour later, it is in the receiver's mailbox. But the other person can read it at his or her convenience. E-mail does not ring during supper or while you are in the shower. But this is one-on-one communication.

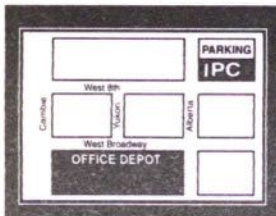
The club is meeting here tonight

For one-to-many interaction, you can participate in newsgroups or forums. These are like clubs for topics such as gardening or stamp collecting or diseases or parenting—but instead of meeting in a community centre or church hall, they meet via the Internet.

One person serves as the hub. Everyone sends messages to or receives messages from that person's computer. This is how it works: you send a message to the hub's e-mail address with only the words in the message "subscribe (this-hobby)." Then a few times a week or even daily, you receive a collection of questions, answers and discussions that others have offered to the group. To put in your own two cents, you e-mail the hub with your question or comment. But what makes these so terrific is that instead of perhaps having access to only a few people in your geographic area interested in the same topic, you are in contact with hundreds from all over the world.

For example, I grow orchids to keep from going crazy over the winter. I belong to two Internet newsgroups: the Orchids List Digest, which is international, and Orchids-can, which is primarily about orchids, orchid growers and activities in Canada. I also belong to the Royal Botanical Gardens Orchid Society, but it only meets once a month and members are a long-distance call away.

Continued on page **31**



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- Warranty: 2 years on systems, parts & labour.
- Other items are respected as from manufacturers

internationalPC

Triton II 3D Station

Intel Pentium Processor with Fan (support up to 200MHz)
Triton II 430VX PCI/ISA Main Board w/256KB Pipeline Cache
16MB-60ns EDO Performance Enhanced DRAM exp. to 128MB
1.44MB Floppy Drive
1.2GB Fast IDE Hard Drive (Mode 4)
PCI Enhanced IDE Cont. w/ 2x16550 Serial,1xBi-Directional Parallel
PCI ATI 3D Xpression + PC2TV 64-bit Accelerator w/2MB SDRAM
Creative Labs Sound Blaster 32 Card with 60W Speakers(P.M.P.O.)
8x Speed EIDE CD-ROM
Sceptre 15" Non-Int. Low Rad. SVGA Monitor PnP
Mid-Tower Case with CSA Power Supply
104-keys Windows 95 Keyboard,3 Button Mouse
2 Year Parts & Service Warranty

EDO MEMORY

3 HOT 3D Games INCLUDED

Sound Blaster PnP 32

100 MHz	$1,680
120MHz	$1,700
133MHz	$1,790
150MHz	$1,890
166MHz	$2,015
200MHz	$2,195

Pentium Pro ATX

Intel Pentium Pro Processor with Fan
Intel Venus 82440FX PCI/ISA ATX Main Board
256KB Internal L2 Cache
16MB-60ns EDO Performance Enhanced DRAM exp. to 256MB
1.44MB Floppy Drive
2.1GB Fast IDE Hard Drive (Mode 4)
PCI EIDE Cont. w/2x16550 Serial,1xBi-Directional Parallel
PCI Rev 2.1-5V interface compliant
PCI ATI Video Boost Windows Accelerator w/1MB (exp. to 2MB)
Sceptre 15" Non-Int Low Rad. SVGA Monitor PnP
ATX Mid-Tower Case with CSA Power Supply
104-keys Windows 95 Keyboard
3 Button MS Compatible Mouse
2 Year Parts & Service Warranty

intel inside PENTIUM PRO

150MHz	$1,900
180MHz	$2,220
200MHz	C a l l

SuperMicro Dual Pentium Pro System

Dual 200MHz ... C a l l

X'Mas Special !!

SIMM Memory

4MB 60ns 72-Pin EDO SIMM	$ 23.50
8MB 60ns 72-Pin EDO SIMM	$ 45.50
16MB 60ns 72-Pin EDO SIMM	$ 98.00
1MB 70ns 30-Pin SIMM	$ 9.00
4MB 70ns 30-Pin SIMM	$ 32.50

ATI

3D Xpression with 2MB DRAM
Three 3D Games Included !!
$143.00

Zoltrix

33.6KBps Internal Voice Fax Modem with Microsoft Phone Software
Limited Quantity !! **$119.00**

Free Installation

Pentium Triton II PCI MainBoard w/256 KB Pipeline Cache

AMD

w/AMD K5-75 MHz	w/AMD K5-90 MHz
$205.00	$230.00

IDE Hard Drive Special !!

2.5GB $410

ENHANCED IDE		
	1.2GB	$259
	1.6GB	$299
	2.1GB	$330

HARD DRIVE

Free Installation

PCI Main Board w/256 KB Cache

w/486 DX4100 MHz	w/486 DX5133 MHz
$165.00	$180.00

Triton II Power Station

Features:
Intel Pentium Processor with Fan (support up to 200MHz)
Triton II 430VX chipset PCI/ISA Main Board w/256KB Pipeline Cache
8MB-60ns EDO Performance Enhanced DRAM exp. to 128MB
1.44MB Floppy Drive
1.2GB Fast IDE Hard Drive (Mode 4)
PCI Enhanced IDE Controller
PCI Cirrus Logic 5446 Windows Accelerator w/1MB DRAM(exp. to 2MB)
2x16550 UART Serial, 1 Bi-Directional Parallel
14" Non-Int SVGA Monitor .28mm dp
Mid-Tower Case with 230W CSA Power Supply
104-keys Win95 Keyboard
3 Button MS Compatible Mouse
2 Year Parts & Service Warranty

NEW

PENTIUM

100MHz $1,060	150MHz $1,270
120MHz $1,080	166MHz $1,395
133MHz $1,170	200MHz $1,575

Triton II Power Station Plus

Features:
Intel Pentium Processor with Fan (support up to 200MHz)
Triton II 430VX chipset PCI/ISA Main Board w/256KB Pipeline Cache
8MB-60ns EDO Performance Enhanced DRAM exp. to 128MB
1.44MB Floppy Drive
1.2GB Fast IDE Hard Drive (Mode 4)
PCI Enhanced IDE Controller
PCI S3 64V+ Windows Accelerator w/1MB DRAM (exp. to 4MB)
2x16550 UART Serial, 1 Bi-Directional Parallel
14" Non-Int SVGA Monitor .28mm dp
Mid-Tower Case with 230W CSA Power Supply
104-keys Win95 Keyboard
3 Button MS Compatible Mouse
Creative Labs Sound Blaster 16 Card
8x Speed EIDE CD-ROM,60W Speakers (P.M.P.O.)
2 Year Parts & Service Warranty

64 Bit MPEG up to 4MB

PENTIUM

100MHz $1,305	150MHz $1,515
120MHz $1,325	166MHz $1,640
133MHz $1,415	200MHz $1,820

Impression

Best Buy PCI BUS

Features:
486/5x86 PCI/ISA Main Board
P24T upgradable w/256KB External Cache
4MB-70ns Fast Page DRAM exp. to 128MB
1.44MB Floppy Drive
850MB Fast IDE Hard Drive(Enhanced Mode 3)
PCI Enhanced IDE Controller
PCI Trident 9680 Windows Accelerator with 1MB DRAM(expandable to 2MB)
2 x 16550 Serial, 1 Parallel & 1 Game Port
14" Non-Int SVGA Monitor .28mm dp
Mini-Tower Case with CSA Power Supply
104-keys Win95 Keyboard, 3 Button Mouse
2 Year Parts & Service Warranty

AMD 486

AMD DX4-100MHz	$785
AMD 5x86-75 MHz	$800

Video Graphics Adaptors

ATI Mach 64 Video Boost PCI 1MB/2MB DRAM	$88/108
ATI Mach 64 WinTurbo PCI w/2MB VRAM	$228.00
ATI Mach 64 Win Turbo PCI w/4MB VRAM	$363.00
ATI 3D Xpression + PCI 2MB/4MB (w/3D Games)	$193/235
ATI 3D Xpression + PC2TV 2MB/4MB (w/3D Games)	$217/259
ATI 3D Pro Turbo PC2TV w/4MB (w/3D Games)	$270.00
ATI TV Tuner Card	$149.00
Diamond Stealth 64 Video PCI 1MB/2MB DRAM	$125/145
Diamond Stealth 3D 3240XL PCI w/2MB VRAM	$259.00
Diamond Stealth 3D 3400XL PCI w/4MB VRAM	$320.00
Diamond Stealth 3D 2000 PCI 2MB/4MB EDORAM	$155/199
Matrox Millennium PCI 2MB/4MB WRAM	$260/370
Matrox Mystique 3D Accelerator 2MB/4MB SGRAM	$245/310
Cirrus Logic 5446 PCI w/1MB exp. to 2MB (MPEG)	$45.00
S3 64V+ PCI w/1MB exp. to 4MB (MPEG)	$55.00
Hardware MPEG Adaptor for S3 64V+ PCI Card	$95.00

Monitors

ADI 4V/LR 15" N/I,L/R(1280x1024,.28mmDP)	$455.00
ADI 5V/LR 17" N/I,L/R(1280x1024,.28mmDP)	$815.00
Mag DX1595 15" N/I(1280x1024,.28mmDP)	$490.00
Mag DX1795 17" N/I(1280x1024,.26mmDP)	$865.00
Mag DX700T 17" N/I (1280x1024,.25mm Trintron)	$1025.00
NEC XV15+ 15" N/I,L/R(1280x1024,.28mmDP)	$695.00
NEC XV17+ 17" N/I,L/R(1280x1024,.28mmDP)	$1130.00
NEC M500 15" .25mmDP Mask Pitch	$640.00
NEC M700 17" .25mm DP Mask Pitch	$1130.00
NEC P750 17" N/I,L/R(1600x1280,.25mmDP)	$1479.00
Panasonic S17 17" N/I,L/R(1280x1024,.27mmDP)	$949.00
PC Partner 14" N/I,L/R(1024x768,.28mmDP)	$268.00
Proview 15" N/I,L/R(1280x1024,.28mmDP)	$368.00
Sceptre 15" N/I,L/R(1280x1024,.28mmDP) PnP	$390.00
Sony 15SF2 15" N/I,L/R(1280x1024,.25mmDP) PnP	$645.00
Sony 15SX1 15" N/I,L/R(1280x1024,.25mmDP)	$550.00
Sony CPD-200SX 17" N/I(1280x1024,.25mmDP)	$965.00
Sony CPD-200SF 17" N/I(1600x1280,.25mmDP)	$1215.00

HD/FD Controllers

ISA IDE HD/FD Controller with I/O	$19.00
VLB Enhanced IDE with I/O UART 16550	$28.00
Adaptec 1505 SCSI CD-ROM Controller	$70.00
Adaptec 1542CP SCSI HD/FD Controller PnP	$270.00
Adaptec 2920 PCI SCSI Controller	$149.00
Adaptec 2940U PCI SCSI Controller	$269.00
Adaptec 2940UW PCI SCSI Controller	$325.00
Adaptec 3940 PCI Multi-Channel SCSI Controller	$530.00

Keyboards & Cases

Fujitsu 4725 Enhanced 104 Keys	$59.00
Fujitsu 8725 Enhanced 104 Keys	$28.00
Lite-On Ergonomic Keyboard w/Touch Pad	$85.00
Mitsumi Windows 95 Keyboard	$19.00
Microsoft Natural Keyboard	$88.00
25" Server Tower with 300W CSA Power Supply	$235.00
Full Size Tower with 230W CSA Power Supply	$110.00
Mid Size Tower with 230W CSA Power Supply	$70.00
Mini Size Tower with 200W CSA Power Supply	$50.00
Desktop with 200W CSA Power Supply	$60.00

Drives & Tape Backup

1.2MB 5.25" Floppy Drive	$57.00
1.44MB 3.5" Floppy Drive	$33.00
Enhanced 850MB IDE Hard Drive	$195.00
Enhanced 1.08GB IDE Hard Drive	$238.00
Enhanced 1.2GB IDE Hard Drive	$259.00
Enhanced 1.6GB IDE Hard Drive	$299.00
Enhanced 2.1GB IDE Hard Drive	$330.00
Enhanced 2.5GB IDE Hard Drive	$410.00
Enhanced 3.1GB IDE Hard Drive	$445.00
Iomega 100MB Int/Parallel ZIP Drive	$265.00
Iomega 1GB Int/Ext JAZ Drive	$550/666
Syquest EZFlyer 230 Ext Parallel/SCSI Remov. HDD	$399.00
Syquest Syjet 1.3GB Int IDE/SCSI Remov. HDD	$535.00
Syquest Syjet 1.3GB Ext Parallel/SCSI Remov. HDD	$705/665
HP Colorado T1000 800MB Int./Ext. Backup Drive	$195/259
Seagate 800MB TR-1 Int/Ext Tape Backup Drive	$185/230
Seagate 3200MB TR-3 Int Tape Backup Drive	$273.00
Seagate 8GB TR-4 Int IDE/SCSI Tape Backup Drive	$525.00

Motherboards

Triton II Pentium 100/133MHz w/256KB Burst Cache	$335/445
GigaByte ATX Dual Pentium Board w/SCSI Interface	$ C a l l
Intel ATX Pentium Pro 200MHz PCI/ISA Main Board	$ C a l l
SuperMicro Dual Pentium Pro 200MHz PCI/ISA Board	$ C a l l
486DX4-100/486DX5-133 PCI/ISA w/256KB Cache	$165/180

MultiMedia

Creative Labs 8X Discovery PnP	$355.00
Creative Labs 8X Performance PnP	$455.00
Creative Labs Sound Blaster 16 PnP	$90.00
Creative Labs Sound Blaster AWE32 PnP	$305.00
Creative Labs Sound Blaster 32 PnP	$145.00
8X IDE CD-ROM Drive	$138.00
10X IDE CD-ROM Drive	$165.00
12X IDE CD-ROM Drive	$190.00
Panasonic 4X Power Drive2 Rewritable Optical Drive	$720.00
Pioneer 6-CD Disc Changer-4.4X CD-ROM Drive	$425.00

Mouse & Mice

14.4 S/R Int. Fax Modem w/Voice	$50.00
28.8 S/R Int. Fax Modem	$90.00
33.6 S/R Int. Fax Modem w/Voice	$119.00
Motorla ModemSurfr 28.8 Int/Ext Fax Modem	$162/190
Motorla VoiceSurfr 28.8 Int Fax Modem	$184.0
Supra 33.6 Int. Fax Modem w/Voice	$135.00
US Robotics Courier I-Modem ISDN Int/Ext	$546/648
US Robotics Sportster ISDN 128K Int	$423.00
US Robotics 33.6 Int Fax Modem	$159.00
US Robotics 33.6 Ext Fax Modem	$230.00
US Robotics 33.6Vi Int Modem(Full Duplex)	$175.00
US Robotics 33.6Vi Ext Modem(Full Duplex)	$269.00
Microsoft Mouse v.2 OEM	$35.00
Logitech Mouseman OEM	$33.00
Microsoft Comp. Mouse	$10.00

Printers

Canon BJ-240 Color Inkjet	$249.00
Canon BJC-4100 Color Inkjet	$310.00
Brother HL730DX Laser Printer 600dpi	$525.00
Epson Stylus 500 Color Inkjet 720dpi	$389.00
Epson Stylus IIs Color Inkjet 720dpi	$233.00
HP 400 Deskjet Color Printer	$285.00
HP 690C Deskjet Color Printer	$469.00
HP 820Cxi Deskjet Color Printer	$549.00
HP 870Cxi Deskjet Color Printer	$689.00
HP 5 Laserjet, 600 dpi 12 PPM	$1799.00
HP 5L Laserjet, 600 dpi 4 PPM	$649.00
HP 6P/6MP Laserjet, 600 dpi 8 PPM	$1039/1309
HP 5Si Laserjet,600 dpi 24 PPM	$3980.00
Raven PR-2405 24-pin, 192 cps	$235.00

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The MicroConcept Systems Home Page.
http://www.mconcept.com

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- 28.8Kbps Modem
- Telephone Answering System
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NetWare v3.12*

NetWare v3.12 5/10 User	$780/1850
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NetWare v3.12 100/250 User	$4170/Call
NetWare v3.12 Manuals Only	$335

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NetWare v4.1 5/10 User	$780/1850
NetWare v4.1 25/50 User	$2350/2910
NetWare v4.1 100/250 User	$4170/Call
Netware v4.1 500/1000 User	Call/Call
NetWare v4.1 Manuals Only	$210

*upgrade full-version

MICROSOFT NT

Windows NT Server v4.0 CD w/5 Clients Lic.	$1008
Windows NT Server v4.0 CD w/10 Clients Lic.	$1399
Windows NT v4.0 Client Access Lic.	$45
Windows NT Server v4.0 upgrade w/5 Clients Lic.	$505
Windows NT Server v4.0 upgrade w/10 Clients Lic.	$670
Windows NT Workstation 4.0 CD	$390
Windows NT Workstation 4.0 upgrade	$188
BackOffice v2.0 Server CD	$2740
BackOffice v2.0 Server upgrade CD	$955
Microsoft SMS version 1.2 w/10 Clients Lic.	$1397
Microsoft SMS version 1.2 w/25 Clients Lic.	$2209
Microsoft SNA Server v2:11 Windows NT	$500

SEAGATE DRIVE

Seagate

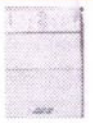
ST51080N 1.08GB,10ms,128K,5400RPM	$360
ST31051N 1.06GB,9ms,512K,SCSI-2	$505
ST31055N 1.06GB,9ms,256K,Ultra SCSI	$505
ST31055W 1.06GB,9ms,512K,Ultre Wide	$590
ST32151N 2.15GB,9ms,512K,5400RPM	$680
ST32151W 2.15GB,9ms,512K,Wide	$770
ST32155N 2.15GB,9ms,512K,Ultra SCSI	$680
ST32155W 2.10GB,9ms,512K,Ultra Wide	$770
ST32105N 2.15GB,9ms,512K,5400RPM	$570
ST32107N 2.15GB,8ms,512K,7200RPM	$835
ST32550N 2.15GB,8ms,1MB,7200RPM	$1020
ST32550W 2.1GB,8ms,512K,SCSI Wide	$1120
ST15230N 4.26GB,9ms,512K,SCSI-2	$1370
ST15230W 4.26GB,9ms,512K,SCSI Wide	$1460
ST15150N 4.26GB,8ms,1MB,SCSI-2	$1490
ST15150W 4.26GB,8ms,1MB,SCSI Wide	$1590
ST34371N 4.3GB,8ms,512K,Ultra SCSI	$1540
ST410800N 9.1GB,11ms,1MB,SCSI-2	$2700
ST410800W 9.1GB,11ms,1MB,SCSI Wide	$2780
ST19171N 9.1GB,8ms,512K,Ultra SCSI	$2850
ST19171W 9.1GB,8ms,512K,Ultra Wide	$2960

TAPE / CD DRIVE

Exabyte Eagle TR-3 Int. Backup Drive	$239
Exabyte Eagle TR-3 Int. Backup Drive w/Nest	$299
Exabyte 8205XL 3.5-7GB Int/Ext 8mm DAT	$1855/2220
Exabyte 8505XL 7-14GB Int/Ext 8mm	$2750/3100
Exabyte 8700LT 5-10GB Ext 8mm Drive	$1500
Iomega Ditto Easy 800 Int/Ext	$140/209
Iomega Ditto 2GB Int/Ext Tape Drive	$215/280
Iomega Ditto 3200 3.2GB Int/Ext	$325/400
Hewlett Parkard Surestore CD-R 4020i	$1165
Seagate 4320NT 2GB 4mm DAT Int. SCSI Drive	$770
Seagate 4324NP 4GB 4mm DAT int. SCSI Drive	$910
Seagate 4325NP 8GB 4mm DAT int. SCSI Drive	$1150
Seagate MS8000MI-SS 8GB int. SCSI Drive	$840
Sony SDT-2000E Int/Ext. 2GB DAT	$945/1135
Sony SDT-4000E Int/Ext. 2-4GB DAT	$1065/1255
Sony SDT-5200 Int/Ext. 4GB DAT	$1050/1245
Sony SDT-7000 Int/Ext. 4-8GB DAT	$1320/1495

POWER PROTECTION

APC BackUPS 280
$145.00



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BackUPS 200/280	$128/145
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Backup Pro 280/420/650	$205/340/415
BackupPro 1000/1400	$545/700
SmartUPS 450/700/1000	$395/500/680
SmartUPS 1400/2200/3000	$850/1460/2320
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SmartCELL for Matrix	$703
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PowerChute Plus for Novell v4.22	$90
PowerChute for Windows	$63
Network Surge Arrest 3 Outlet/7 Outlet	$29/66
PowerManager 6 Outlet	$93
PowerNet SNMP agent for Novell	$157

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Assembly, 10 BaseT Cable 8/25/50 ft	$10/18/25
Assembly, 10 BaseT Cable 100 ft	$45
Cable, 10BaseT 8c UTP, per ft	$0.35
Cable, 10BaseT 8c UTP, per 1000 ft	$220
Connector RJ45M	$1.00

Coaxial

Assembly, RG58/AU Thin Coax 25/50 ft	$15/22
Assembly, RG58/AU Thin Coax 100 ft	$35
Cable, RG58/AU Bulk per ft	$0.25
Cable, RG58/AU Bulk per 1000 ft	$180
Connector, BNC "T"	$2.50
Terminator, BNC, 52 ohm	$2.50
Tool,BNC Crimping	$60
Terminator, BNC, 52 ohm w/ground strap	$10

ETHERNET COAX / COMBO Adapters

3COM 3C503 Etherlink II BNC ea/5+	$275/240
3COM 3C509B Etherlink III BNC ea/5+	$150/135
3COM 3C509B Etherlink III BNC 20 pk	$2405
3COM 3C509B Combo BNC/RJ45 ea/5+	$165/145
3COM 3C509B Combo BNC/RJ45 20 pk	$2630
3COM 3C509B Combo BNC/RJ45 100 pk	$11960
3COM 3C592 Combo BNC/RJ45 EISA	$282
3COM 3C900 PCI Ethernet III Combo	$178
CNet CN200E+ BNC Ethernet Jumpless	$55
CNet CN650E+ BNC & 10BaseTEthernet	$55
CNet CN900 PCI Ethernet Combo	$75
GVC 2005BT ISA Coaxial/10BaseT Jumpless	$55
GVC 2006BT PCI Coaxial/10BaseT Jumpless	$89
Intel ISA EtherExpress Pro 10+ Combo	$150
Intel ISA EtherExpress Pro 10+/Flash Combo	$160
Intel PCI EtherExpress Pro 10+ Combo	$183
SMC 8416B ISA EtherEZ Coax	$126
SMC 8416BT ISA EtherEZ Combo	$140
SMC 8432BT PCI EtherPower Combo	$199

Print Servers

Emulex NetQuemate 10BaseT Print Server	$400
Emulex NetJet NT + Print Server	$525
HP JetDirect J2550A RJ45	$443
HP JetDirect J2552A RJ45/BNC/LocalTalk	$514
HP JetDirect J2555A Token Ring DB-9 & RJ45	$748
HP JetDirect EX Plus J2591A	$409
HP JetDirect EX Plus3 J2593A RJ45/BNC	$640
HPJetDirect EX Plus3 J2594A Token Ring DB-9 & RJ45	$745
HP JetDirect J2590A 10/100VG Print Server	$778
Intel NetportExpress Pro Ext. Printer Server	$515
Intel NetportExpress Pro Int. Printer Server	$360
Intel NetportExpress Pro/100 Ext. Printer Server	$630

PCMCIA Adapters

3COM 3C589C Etherlink III TPO	$183
3COM 3C589C Etherlink III Combo	$245
3COM 3C689 Tokenlink III	$455
D-Link DE-650T PCMCIA TPO NE2000 Compatible	$188
D-Link DE-650CT PCMCIA Combo NE2000 Compatible	$210
D-Link DME-288T Ethernet/Modem	$535
GVC PCMCIA Ethernet Combo + 28.8bps Modem	$445
SMC 8020T EtherEZ PC Card (RJ45)	$169
SMC 8020BT EtherEZ PC Card Combo	$228
Xircom PCMCIA Ethernet RJ45	$185
Xircom PCMCIA Ethernet BNC & RJ45	$230
Xircom PCMCIA RJ45 Ethernet + 33.6bps Modem	$422
Xircom PCMCIA Combo Ethernet + 33.6bps Modem	$470
Xircom PCMCIA 10/100 Ethernet Ready	$293

10 BASE T HUBS

3COM 3C16170 Linkbuilder 12 Port Hub	$445
3COM 3C16670 Linkbuilder FMS II 12 Port	$710
3COM 3C16671 Linkbuilder FMS II 24 Port mgmt	$1225
3COM 3C16672 24 Port Telco	$1355
3COM 3C16675 Linkbuilder FMS II 48 Port mgmt	$2900
3COM 3C16405 12 Port Switch Hub	$1310
3COM 3C16406 24 Port Switch Hub	$1920
3COM 3C16700 OfficeConnect 8/TPO	$199
3COM 3C16701 OfficeConnect 8/TPC	$243
3COM 3C16710 OfficeConnect 8/TPM	$655
CNet CN88TPC 8 Port Hub	$160
CNet CN80TPC 12 Port Hub	$265
CNet CN8816TPC 16 Port Hub, Small Footprint	$285
CNet CN8900TPC 12 Port Hub	$535
CNet CN8910TPC 12 Port Hub w/SNMP	$795
D-Link Micro Hub 5 Port	$138
D-Link DE-809TC 8 Port Hub	$182
D-Link DE-812TP 12 Port Hub	$375
D-Link DE-816TP 16 Port Hub	$480
Hewlett Packard AdvanceStack 12 J2600A	$725
Hewlett Packard AdvanceStack 24 J2601B	$1310
Hewlett Packard AdvanceStack 48 J2602B	$2515
Hewlett Packard 12 Port EtherTwist J2630A	$1260
Hewlett Packard 48 Port EtherTwist	$2600
SMC 3605T-EZ 5 Port Hub	$136
SMC 3608TC-EZ 8 Port Hub	$260
SMC 3616TC-EZ 16 Port Hub	$485
SMC 3206TA Tigerhub 6 Port Hub	$228
SMC 3206BC Tigerhub 6 Port Hub BNC	$833
SMC 3206FC tigerhub 6 Port Fibre	$1920
SMC 3312TC TigerStack 12 Port Hub	$699
SMC 3326TC TigerStack 26 Port Hub	$1245
SMC 3328T TigerStack 28 Port Hub	$1245

10 BASE T Adapters

3COM 3C503-16 TP ea/5+	$275/240
3COM 3C509B TPO ea/5+	$119
3COM 3C590 TPO PCI	$165
3COM 3C592 TPO EISA	$252
3COM 3C900 TPO PCI	$150
CNet CN600E 10 Base T ea/5+	$55
CNet CN600E+ 10 Base T Jumpless	$55
CNet CN970EBT 10 Base T PCI	$173
HP Ethertwist 16 10 BaseT J2405A ea/6+	$130
Intel ISA EtherExpress Pro 10+ 10BaseT	$123
Intel ISA EtherExpress Pro 10+/Flash 10BaseT	$135
Intel PCI EtherExpress Pro 10+ 10BaseT	$150
Microdyne NE 2000T+ 10 BaseT	$95
Microdyne NE 2000T+ 10 Base T 20 pk	$1700
Microdyne NE3300 EISA Combo	$275
Microdyne NE5500T PCI 10 Base T	$149
SMC 8416T ISA EtherEZ 10BaseT	$125
SMC 8432T PCI EtherPower 10BaseT	$160

100 MBPS SYSTEMS

3COM 3C905 TX PCI
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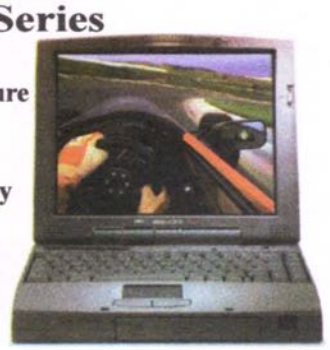

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- Full-Screen MPEG Video
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- 28.8 Data/Fax/Voice Modem
- Lithium Ion Battery

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2400	P100	8MB	810MB	11.3 DS	$2,430
2400CD	P100	16MB	1GB	11.3 DS	$3,580
4200	P100	8MB	810MB	10.4 TFT	$3,800
4230	P133	8MB	1GB	10.4 TFT	$4,930
6000H	P100	16MB	1GB	11.3 TFT	$4,930
6030H	P133	16MB	1.35GB	11.3 TFT	$6,240
6030X	P133	16MB	1GB	12.1 TFT	Call

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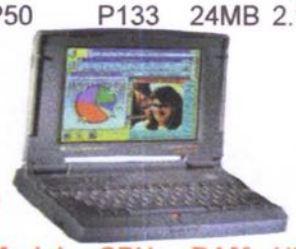
Model	CPU	RAM	HDD	Display	Price
J20	P100	8MB	800MB	11.3 DSTN	$2,585
J50	P133	8MB	800MB	10.4 TFT	$3,920
P30	P100	8MB	800MB	11.3 DSTN	$3,350
P30	P100	8MB	1.2GB	11.3 DSTN	$3,630
P50	P133	8MB	800MB	11.3 TFT	$5,265
P50	P133	8MB	1.2GB	11.3 TFT	$5,550
P50	P133	24MB	2.1GB	12.1 TFT	$6,310



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Model	CPU	RAM	HDD	Display	Price
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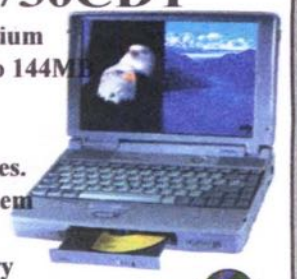
650CD	P133	16MB	1.4GB	12.1 DSTN	$4,070
650CDT	P133	16MB	2.1GB	11.3 TFT	$5,480
6020	P120	8MB	1GB	11.3 TFT	$5,380
6030	P133	16MB	1.35GB	12.1 TFT	$6,070
6050	P150	16MB	1.35GB	12.1 TFT	$6,820

TOSHIBA

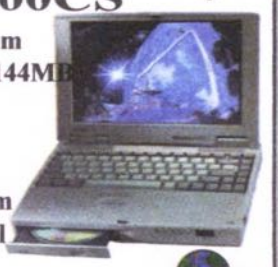
TECRA 730CDT



- 150MHz Intel Pentium
- 16MB RAM exp. to 144MB
- 2GB Hard Drive
- 12.1" TFT Active
- 1024x768 Screen Res.
- 28.8Kbps Fax Modem
- 6x CD ROM
- Lithium Ion Battery
- Sound Blaster Pro

3 YEAR

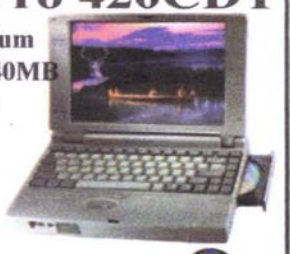
TECRA 500CS



- 120MHz Intel Pentium
- 16MB RAM exp. to 144MB
- 1.26GB Hard Drive
- 2MB Video RAM
- 12.1" Dual Scan
- 28.8Kbps Fax Modem
- 6x CD ROM optional
- Lithium Ion Battery
- Sound Blaster Pro

3 YEAR

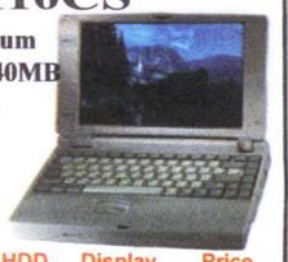
Satellite Pro 420CDT



- 100MHz Intel Pentium
- 8MB RAM exp. to 40MB
- 810MB Hard Drive
- 2MB Video RAM
- 11.3" TFT Active
- 6x CD ROM
- Sound Blaster Pro

3 YEAR

Satellite 110CS



- 100MHz Intel Pentium
- 8MB RAM exp. to 40MB
- 810MB Hard Drive
- 1MB Video RAM
- 11.3" Dual Scan
- Built-in TrackPoint

Model	CPU	RAM	HDD	Display	Price
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200CDS	P100	8MB	810MB	11.3 DSTN	$2,820
420CDS	P100	8MB	810MB	11.3 DSTN	$2,980
420CDT	P100	8MB	1.3GB	11.3 TFT	$4,680
430CDS	P120	16MB	1.3GB	11.3 DSTN	$3,540
430CDT	P120	16MB	1.3GB	11.3 TFT	$4,800
500CS	P120	16MB	1.3GB	12.1 DSTN	$4,220
510CDT	P133	16MB	2.1GB	12.1 TFT	$6,800
660CT	P150	16MB	1.3GB	11.3 TFT	$6,330
730CDT	P150	16MB	2.1GB	12.1 TFT	$8,100

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A personal computer

Continued from page **26**

With these computer groups, I can locate a plant I have always wanted, ask about a new potting media I saw used at another club's show or find people who will trade pollen to help conserve endangered species. I have "friends" in Belgium, South Africa (this person sent stamps to my youngest son and articles for our society newsletter to me), Saskatchewan and Texas.

Newsgroup discussions are often lively and the willingness to help and share defies the dog-eat-dog mentality we're always told is the heart of 20th century culture.

For people in isolated areas, a phone connection to the Internet makes them an instant member. For example, Steve Saunders in Nova Scotia posted photos of elegant orchid displays on the Web within a few days of the national Canadian Orchid Congress in Halifax this past Fall. With children in school, I could not go. But thanks to Steve, I was still able to view the show anyway.

Using my computer, I can also send a photo of an orchid I'm having a problem with to a special section of the Orchid List Digest and receive a diagnosis the same day from someone thousands of miles away.

And there are other ways computers help with my orchid growing. I maintain a "database" of my orchids using a special program called Orchidata-3. (The software from Computer/Management Services requires Windows/DOS and sells for US$66.50, plus shipping and handling). A database is a special group of programs that collects, sorts and collates items, numbers or other information. A common use for a database is to maintain a mailing list that can be sorted automatically by name, province, affiliation, etc.

With my orchids, I use a database to keep a record of the name, parents, flowering history, repotting and, most important, where I acquired the plant. Why do I need the last item? Orchids are becoming endangered all over the world. This provides evidence that they were obtained from legitimate sources and not collected illegally or smuggled.

I can also print a report with the database that sorts all plants blooming in the spring so that I can remind myself to repot and fertilize without jeopardizing flower spikes.

Web world wide

The Web is the third big player on the Internet in addition to e-mail and newsgroups. The World Wide Web is like indexed yellow pages for businesses and individuals. But instead of a small box advertising a business or service, "Web pages" can be almost any number of full pages (but are usually less than 10). The pages tell you what a business or organization has to offer or what an individual is interested in. As a perk, there are always items marked by bold type or a different color type. By clicking on one on your computer screen with the pointer that is controlled by your "mouse," you can jump to another Web page for that related item.

For instance, Ruthe Stowe (her Internet address is http://home.netinc.ca/~rstowe/) in Hamilton is interested in weaving. On her page, she has links to the weaving guild she belongs to and the weaving newsgroup she subscribes to. She also has other links to weaving friends, resources such as looms, software, classes, events, etc. along with other things or places she finds interesting such as textile museums. This is one of the best features of the Internet and Web: when you become interested in a topic or hobby such as doing stained glass, antique cars, photography, women's issues, political causes, etc., the Web offers access to clubs, resources, technical information and people who share your enthusiasm.

The Web is like a huge library that is stocked with books, videos and people. The people are as numerous as books in a typical library. For instance, Ruthe Stowe has a counter to indicate how many times her site has been visited. In the last six months, she has received more than 4,000 visitors. This does not mean, however, that her computer has to run 24 hours a day. Her Web pages are kept on the computer that provides her Internet account for all to access.

Web sites often contain information to help you with a project. For example, one offers step-by-step help to build your own computer. It also contains information on locating and buying parts (http://www.verinet.com/pc/).

The family roots phenomenon

Yet another Web site is an index to hundreds of genealogy (the study of your family ancestors) sites on the Internet, including a number of Canadian ones. One site, Barrelful of Genealogy Links, has registered over 56,000 callers in the last six months. (I am number dropping only to give you an idea of how many people worldwide are communicating and sharing.)

None of these three sites (the weaving

Continued on page **33**

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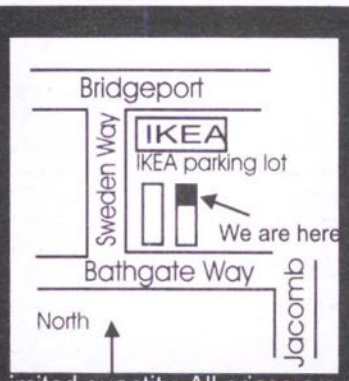

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A personal computer

Continued from page **31**

site, build your own computer site and this genealogy site) are commercial. All have been published because someone had an interest and wanted to share it.

Software programs you can purchase sometimes also have built-in links to the Internet so that you can add or update information. Two of the most common genealogy programs, for example, have Internet links for research. Family Gathering (works with both Windows and Macintosh computers and retails for about $62) from Palladium links to chat rooms and discussion groups hosted by experts, a genealogy reference library and a fee-for-service genealogical research service.

The program itself does far more than penciling in a few names and dates. You start with an on-screen form in which you type names, dates, places and events such as birth, burial and where you found the information for each ancestor. You can add photos or scans of documents such as birth certificates or old land records. (Scanners are computer add-ons that work like photocopiers but put the image on your screen and into your computer's memory. The image can be stored or printed out.) Besides doing Internet research directly from this program, you can also search Internet sites or newsgroups such as Roots-L for more information.

Family Tree Maker Deluxe from Broderbund, which sells for $112 and requires Windows (a Macintosh version will be available early this year), comes with millions of names in an index that you can search by simply typing in a name and asking your computer to find all the references to that individual.

The company also produces a large number of research CD-ROMs with census and other genealogy indexes, immigration records, and millions of people in family trees that have been submitted to share with other researchers. They have also recognized that many of their CDs were primarily American and have started to release data for other countries.

First was an 18th century Irish census. Last month Broderbund released two for Canada: the index to the Ontario 1871 census with 375,000 names (this disc, No. 116, sells for $28) and the Canadian Genealogy Index 1500s-1900s, with two million names gathered over 20 years from more than 1,000 sources (it sells for $42 and is disc No. 118).

Many genealogy societies in Canada have Web pages with links to numerous additional research sources. Best known is the Ontario Genealogical Society.

With these programs, you can ask your computer to do what it does best: organize data. By choosing from a menu, you can have an ancestor tree of a specific number of generations with photos, dates and places—as much or as little information as you choose to

Continued on page **35**

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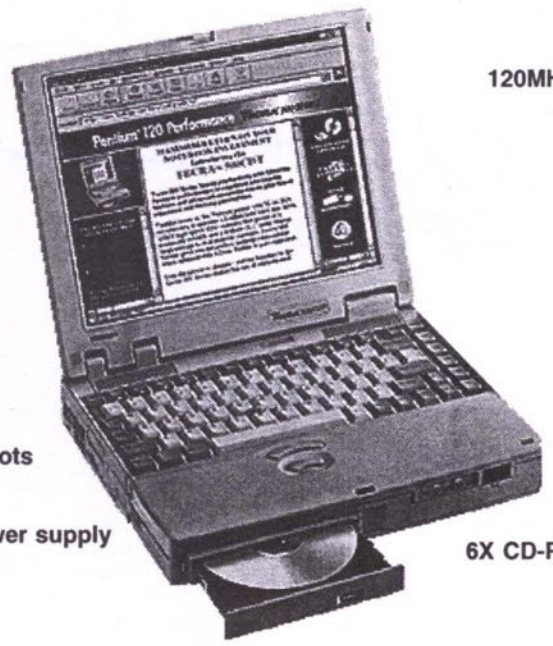

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A personal computer

Continued from page 33

add. Start with any name and choose ancestors or descendants. Then ask your computer to print it out with a fancy border so that you can frame it or add it to a family picture album. It will also take all the information you have added and collate it in a family journal or biography.

So, with these programs, you can research, organize what you have found, and publish it in a professional-looking form.

Hobbies and crafts

One final example: if you are a crafts person, you will know how tedious designing craft items by hand can be. With computer programs, you can play with design features, change them with a click of the mouse, add or take away color, resize, etc. and estimate what the end product will look like.

For instance, a program called Stitch Painter 2.0 from Cochenille (run by Canadian Susan Lazier) has been developed for any textile craft design that uses a grid, from weaving or needlepoint to cross-stitch to knits to beading (it requires Windows or Macintosh and sells for $225, the beading module is priced at $40). Make a design on the grid, then flip, rotate, resize or repeat it somewhere else on the project using any of 250 different colors.

Two other Canadians are getting in the act with weaving software: ProWeave from Cameron Fiber Arts (available for Windows 3.1 or 95 for $295, or $255 for Macintosh) and Fiberworks PCW from Fiberworks ($27 for the demo version for PCs, with a Windows and Macintosh version due out this spring).

If you weave, then you know that throwing the shuttle back and forth is not the hard work. Rather, it is choosing and developing a design and transferring it to the loom when you thread the warp. You may draw a design on graph paper, but that only tells half the story. With Fiberworks, you can instantly see what the back of the project looks like. It will also drive electronic looms. You can experiment with colors until you get the shade and hue right. Then go to the dye pot and dye your yarn to your own specifications. You are also able to make corrections anytime on the computer rather than painstakingly correcting with needle weaving on the loom later. Or print the design to share it with friends in your weaving guild. If you teach weaving, it is a great tool to display just the threading and treadling draft, leaving the drawdown a blank grid, or reverse these values to demonstrate fabric analysis showing interlacement or structural drawdown.

Proweave is another design program for hand looms that will drive electronic looms. It has a wonderful custom color editor so that you can match specially dyed yarns to your design. It will also calculate how many heddles you need for each harness, which saves running out in the middle of warping.

Dini Cameron also runs a computer weaving design workshop from her home near Ottawa. The cost is $250 for five full days plus $25 per day room and board. Here is how computers have affected a craft thousands of years old. She uses computers to develop new methods of design that were not possible before. Experimentation on this scale would just be too complex without computers. ❑

Contacts:
Broderbund: Tel: 800-474-8696.
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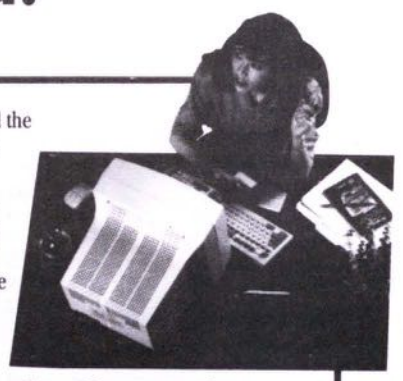

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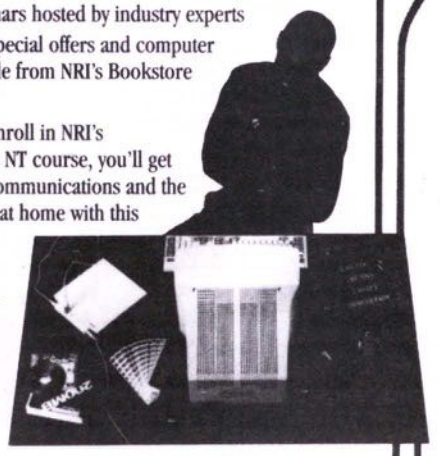

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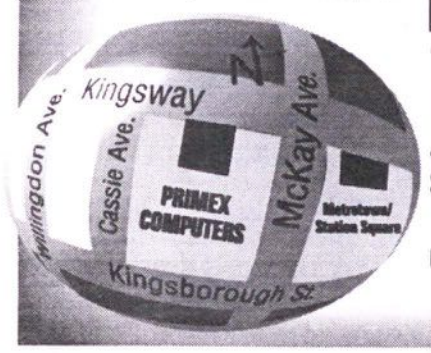

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Troubled times at Novell

BY GEOF WHEELWRIGHT

There is trouble in the house of Novell. The extent of that trouble became urgently clear during the recent NetWorld/Interop conference in Atlanta when the question on many commentators' lips seemed to be: "Just how dead is Novell?" (To which the answer might come: "Novell wouldn't VOOM if you put 40,000 volts through it. It is no more, etc.")

The very fact that such dark humor can be used in talking about the company that virtually built the PC networking market— and announced only this past spring that it enjoyed an enviable $2-billion business in network software and services—is an indication of the company's ills.

No matter how much of the existing market Novell still enjoys for its installed base of NetWare servers, the perception appears to be that Microsoft and Windows NT 4.0 are starting to walk away with the NetWare market, and that Novell is just too slow and self-involved to get its act together in time to let users take advantage of all the current hot issues in the network market.

Novell boosters will tell you that none of this is true, and they have a point. But it's a hard perception to fight, so hard that the Novell board of directors took the extreme step of making a major change in top management at the end of August to try and turn the tide.

What happened to Bob?

On Aug. 28, Novell's board of directors accepted Bob Frankenberg's resignation as chairman, president and chief executive officer (CEO) of Novell, citing the impetus for the decision as "the board's perspective to long-term business objectives, not short-term issues."

In many ways, it was too bad. It was yet another nice guy finishing last—or at least being shown the door. Frankenberg once said in an interview that he knew the attention lavished upon him by the financial and trade press had little to do with him as a person. It was a product of the job and would cease when he quit.

Perhaps it is because he was so completely without ego about such things that the Novell board said it saw "opportunity for new leadership to swiftly and aggressively take advantage of expanding opportunities in the networking marketplace" when it replaced him as chairman of the Novell board with John Young, the high-flying former chairman and CEO of Hewlett-Packard. (Ironically, Young used to be Bob Frankenberg's boss when the latter also worked at HP prior to his all-too-short reign at Novell.)

Meanwhile, Novell supersalesman (and executive vice-president of worldwide sales) Joe Marengi was named president, and now reports to Young. At the time of writing, HP's board was still in search of a new chief executive officer.

Can these guys make a difference?

John Young is the archetypal, old-style computer industry success story. Although he is only likely to be actively involved in the company and overseeing its management until

Continued on page 59

Thinking small: Making your first computer a portable

BY GEOF WHEELWRIGHT

If you have never had the pleasure of owning a personal computer and are now convinced that you really need one, do not limit your horizons to a standard desktop personal computer.

The latest breed of notebook computers are capable of doing everything their larger desktop siblings can do, while offering the virtue of being able to be used anywhere or anytime. They typically come with hard disk capacity of at least 800 MB, between 8 MB and 16 MB of memory, high-resolution color displays, Pentium processors rated at 100 MHz or better and two PC card slots for adding on extra functionality.

In fact, most notebook computers are just as happy to work like a desktop computer as they are sitting in front of you on a plane. If you plug a full-size keyboard, an external mouse and an external monitor into your notebook computer, you can use it just as if it were a desktop system. And when you unplug the external goodies, you can take it on the road with you without worrying that you are leaving any data behind "on the main system."

In short, for most day-to-day computing tasks, there is little that you cannot do on a standard notebook PC that you could on a desktop computer with similar specifications. The main difference is that a notebook computer uses a different technology (PCMCIA or PC Card technology) to allow for internal hardware expansion, while desktop computers have "slots" into which you place printed circuit boards.

For most general purpose expansion (such as adding modems, video capture boards or network cards), there are PC Card versions of desktop expansion cards—with the only difference being that you'll tend to pay more (likely 50 percent more, but as much as double) for the PC Card version than for a standard expansion card for a desktop computer.

In fact, that is still generally true for notebook computers, which often command a premium of 30 per cent or more over the desktop equivalent. This means that if you want a notebook computer as your main system, you should have a compelling reason for that choice.

The best reason is that it will allow you to be more productive, or save you the cost of having one computer in the office and another at home. For some users, the cost of a notebook computer can often be partially (or even fully) funded by their employer if they are to be used at both work and home.

Your reasons for choosing a notebook computer as your first system will go a long way to determining what kind of system you want. Whatever use you are planning, make sure that you take the following issues into account, in addition to the basic questions of processor speed, hard-disk size, memory and PC Card expansion:

Long battery life: If you plan to work while you are on a plane, boat, bus or train, there is nothing more frustrating than running out of battery power just as you are completing a crucial bit of work. To ensure that you don't run short of battery power, look for a laptop computer that runs on lithium ion batteries (which offer the longest life) and has slots for two rechargeable batteries, so that you can work for an extended period without having to swap batteries.

Screen clarity and readability: No matter how light and fast your laptop computer is, none of it will do you any good if you can't read the screen.

Keyboard size and a pointing device: Once again, a laptop computer can have all the wonderful features in the world, but if you can't enter information and commands into it, the rest of the system is no use. Spend a little time trying out the keyboard and pointing device (usually a trackball, mouse, "pointing stick" or touch pad) on your prospective laptop before you buy it. ❑

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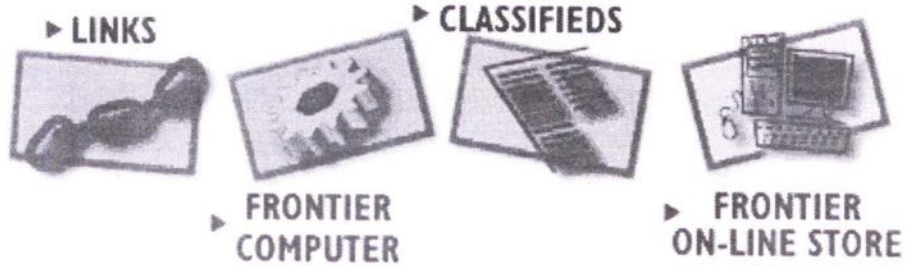

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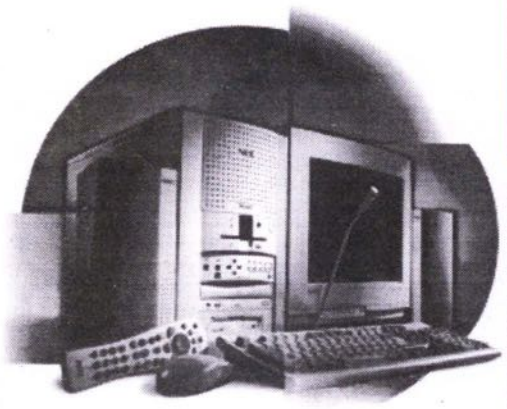

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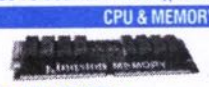

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Setting up a comfortable workspace

Some simple steps to safe computing

BY EMRU TOWNSEND

The word "ergonomic" is mysterious to most people. We see it on all sorts of computer products, but few people think it means more than odd-looking curves on a keyboard or funny-looking bumps on a mouse.

Simply put, ergonomics is the science or practice of modifying your environment so that you can interact with it in a safe and healthy manner. From personal observation, many home and office computer users put little thought into their work habits or how their workspace is organized. This can lead to complaints about headaches, neck pain, back pain, fatigue, tired eyes, sore wrists, sore elbows, or sore shoulders, which can in turn lead to decreased productivity and a less enjoyable computing experience. In the worst cases, it can mean repetitive strain injuries (RSI), or back problems.

What follows is a guide to creating an "ergonomically correct" work area, based both on research and personal experience. Some of these solutions require nothing more than a little forethought. If you are in the process of shopping for a new computer or are just setting one up, you should use this guide to influence your buying decisions. If you already have a computer, you should take a hard look at your existing setup and consider what needs improvement or replacement. While some of the solutions listed here

Continued on page **42**

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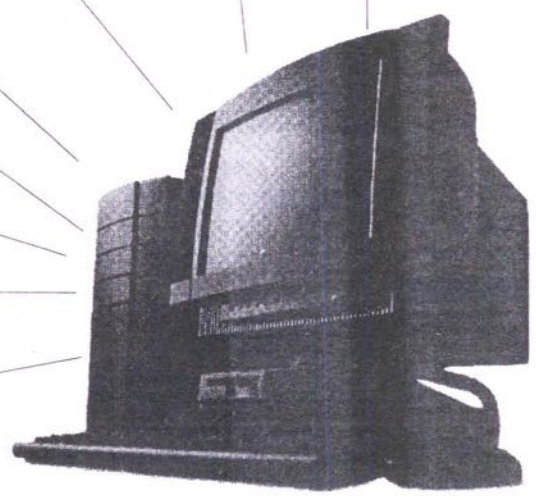

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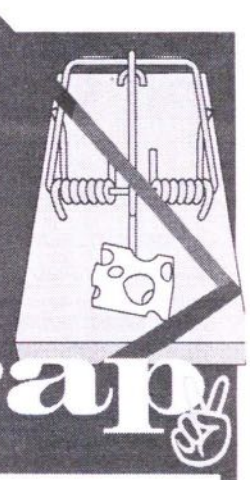
Avoiding The Mouse Trap

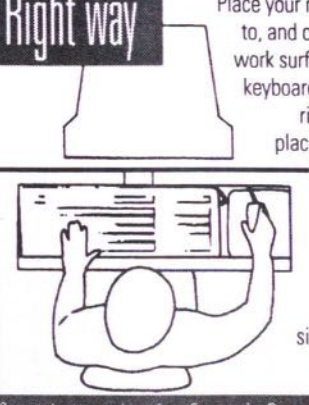


Wrong way

Avoid stretching your arm and shoulder to reach the mouse

Right way

Place your mouse close to, and on the same work surface as, your keyboard. If you are right-handed, place the mouse on the right side of the keyboard. Place the mouse on the left side if you are left handed.



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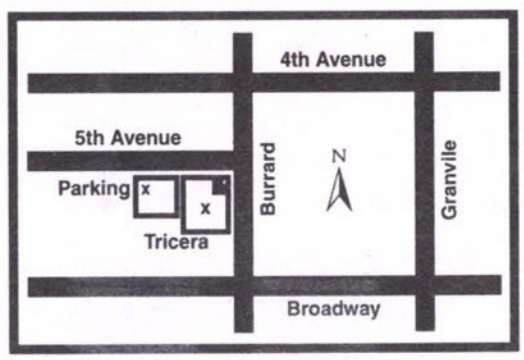

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Comfortable workspace

Continued from page **40**

can be expensive, they're definitely worth it in the long run.

Be prepared!

Many home computer owners find themselves shoehorning their computer somewhere in the established order (or chaos) of their homes. It ends up squeezed into a corner, on the kitchen table, in the basement, or in someone's bedroom. In many of these cases, some space is cleared, the computer is plunked down, and little more is thought of it. What's needed in these cases is a little less rearranging and a bit more prearranging.

One of the first considerations in placing a computer is lighting. You're going to be focusing on one spot, the computer's screen, for extended periods of time; your workspace should not be too dark, as the monitor's brightness will eventually overwhelm you. By the same token, if the area is too bright, your eyes will start to water from constantly squinting in order to see through the glare. Try to reduce the amount of reflective surfaces nearby. Whenever possible, soft, indirect lighting is best; otherwise, try to limit the amount of direct glare from lamps and overhead lights. Natural light is soothing, and saves energy, but try to avoid getting direct sunlight on your screen while you're working.

The next phase is the work area itself. In general, you want to make sure your desk and chair are going to meet two criteria: they need to be comfortably arranged, since you'll be sitting there for extended periods of time, and everything on, in, or around the desk needs to be reasonably accessible.

Your first concern is making sure you're able to sit comfortably and safely. Your chair should have some sort of lower back support, and older chairs with four wheels should be avoided—a yawn and stretch at the end of a long day in such a chair can easily lead to its tilting backwards and falling over.

You want to sit in such a way that your hands and arms are in a "neutral" position; that is, your forearms should be parallel to the desk's surface, and your hands should not have to tilt up or down to reach the keyboard. Your feet should also be able to comfortably rest on the floor or, preferably, on a footrest.

Choosing the right chair and desk combination can be tricky, since it depends on how your body is put together. Sometimes, finding just the right combination can require many trips to different furniture or office supply stores, armed with measuring tape and a notepad.

Four easy pieces

Now we can worry about the computer itself, which can be broken down into four main segments: the monitor, the computer enclosure that holds the central processing unit (CPU) and power supply, the keyboard, and the mouse.

The monitor should have two crucial components: some provision for reducing glare, and a built-in tilt/swivel stand. It should also be elevated in such a way that you can look straight ahead and see the top half of the screen. (If you can afford it, get a monitor that's at least 15 inches in size; while it's a bit more expensive than a 14-inch monitor, it can be much easier on the eyes.)

The CPU enclosure should be placed somewhere within easy reach. People who own mini or medium tower computers have a tendency to put them on the floor, freeing up valuable desktop space. Unfortunately, this leads to some pretty interesting contortions when you're trying to reach for the power switch, disk drive, or CD-ROM drive. This is a minor nuisance at best, but when you have to install a program that comes on 10 floppies, you might begin to feel aches after the fourth or fifth time you have to lean over to switch diskettes. IBM had the right idea when it designed the new Aptiva model, which separates the drive bays from the CPU.

I generally recommend split keyboards like the Microsoft Natural Keyboard, since they're designed to alleviate stress on the wrists by allowing you to position your hands more naturally, and have built-in wrist rests. But keep in mind that some people dislike this style of keyboard, so the best advice here is try before you buy. A decent wrist rest—a padded support that runs the length of the keyboard—is highly recommended.

Virtually all home PCs now come with Windows, which means you'll also need a mouse (and of course, you'll need a mouse with a Macintosh). Like keyboards, mouse preferences are subjective, so try before you buy. When you consider how much mileage your average mouse gets in the space of a day, you quickly realize how much wear and tear

Continued on page **44**

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Comfortable workspace

Continued from page **42**

your arm, wrist, and fingers are experiencing.

Many neck, shoulder, arm and wrist pains can be attributed to poor mouse placement. You shouldn't have to reach for it every time you need to use it. Mice should be on about the same level as the keyboard. There should also be ample space for the mouse; too many people still squeeze it in between the keyboard and something else, resulting in unnatural arm motions or a juggling act between the keyboard and the mouse. If desk space is really at a premium, consider an attachment for the side of your desk or chair where the mouse can rest.

A variation of the mouse is the trackball, which some people prefer to a mouse. You might also consider alternate pointing devices, such as graphics tablets or touch pads. These have the advantage of being immobile, and many people find them easier on the wrists than a mouse. Also, if you're already suffering from an RSI, these gadgets can be a godsend—but you might want to check with your physician first.

Peripheral visions

Peripherals come in many shapes and sizes, but the general rule can be summed up in one word: accessibility. Your peripherals should be within easy reach, so that you can get to power switches, eject buttons, and the like without having to stretch or twist. However, as more and more peripherals compete for limited desk space, this is not always possible. When you're forced to move something a bit farther out of the way, a good rule of thumb is to keep the most frequently used peripherals closest to you. The mouse should be right next to you; something like an external modem, which is generally turned on and off once per computing session, can be placed further away.

Always leave room for your printer and a document holder. Your document holder should sit alongside your monitor, so that you don't have to repeatedly tilt or swivel your head to switch your gaze from the monitor to the holder and back. If you have no room on the desk to the side of your monitor, get a document holder that attaches directly to the monitor.

Your printer should have space clear to easily feed paper, read the display panel, and remove paper from the tray. If you don't have a printer now, plan ahead: it's very likely you'll get one in the future.

The Zen of safe computing

Because we're all built differently, it can be a nightmare setting up a single workspace for multiple users—a common situation with most home computers. There are desks and chairs available that allow users to customize just about every conceivable angle and elevation; it may be a worthwhile investment for a work area that will be used by three or more people. It's hard to come up with the ergonomic system that's ideal for all members of the family, but it's a goal worth aiming for.

If there is one universal rule to follow, it's that the safest computing is to occasionally not compute. No project is so important that time cannot be taken to eat properly, stretch, massage your wrists, or simply take a quick stroll around the house or office. If you spend all day in front of a computer at home or at work, include a 15-minute walk or bicycle ride in your lunch break. In general, regular rest breaks—even as short as five minutes—help to ease physical tension and relax potentially overworked muscles.

Work smarter, not harder

These guidelines address the most common ergonomic problems in computing environments, but they're not complete, and they're not universal. Nor is it easy to get everything right the first time. (Every three months, I do a review of my work area to see what needs improving; I've completely rearranged everything at least three times in the past two years.)

For a more in-depth perspective on ergonomics, a good resource is Cornell University's Web site (see contacts). It's regularly updated, and provides the texts of several studies in the field.

Achieving the perfect computer environment is hard work, but bear in mind that it's your physical and mental well-being at stake, as well as that of your family, co-workers, or employees. Safe computing is happy computing. ❑

Contacts: Cornell University ergonomics,
Web site: http://www.ergo.human.cornell.edu

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Your first peripherals

Separating the toys from the tools

BY ROD LAMIRAND

After you bring your first computer home and play with it—excuse me, I should say, worked with it—for a few months, you discover that there is a world of things you could do if you only had a scanner, or a fancy printer. You are perfectly happy with your machine but if you only had a business-card reader, or a joystick, or that neat little optical character recognition (OCR) pen.... Well, my friend, you are thinking about peripherals.

You are thinking about what you need, what you could use, and what you want. As a long time-computer lover—and I say this with a tinge of embarrassment—I have been bitten by the every-little-gadget bug. And after all the fun and bother of getting the thing home, it is sometimes the case that you bought yourself an expensive toy, not a useful tool. Read on and I will dispense a little advice purchased over the years through sad experience.

A birthday to remember

I went out for breakfast with my wife on my birthday and she gave me a card, which contained money from her and both our families. Rather than give small presents, that day I was to take the money and buy whatever computer thingy I wanted. By "thingy" my beautiful betrothed meant peripheral and the envelope contained $300. Talk about technophile heaven—breakfast lay forgotten as we sped off.

In the end, I brought home a hand scanner which, at that time, cost $325. It sits here now. I never use it. It will scan a small image but only in 256 grayscale or black and white. I have used it for OCR, but how often does one find something that is only 10.5 cm (four inches) wide or less that needs to be converted to text, and that is too long to type? I'll tell you how often—once in three years.

There is the ability to auto-stitch two scans together but it works poorly at best. Now, there is nothing wrong with the product and for someone with a laptop who needs to capture clipart on the go, it would be perfect, but it was bad way to spend $300. (I have never admitted this to my wife or family, and if they read this I will add that it was one of the best birthdays I ever had). I've told this sad tale to make an important point. It takes a lot of thought to understand the difference between something we want and something we will use.

The useful and the alluring

And so, what things are useful out there? I would recommend that if you don't have a modem, a CD-ROM drive or a printer, that is where you should start. As for the type of modem, CD-ROM drive or printer, that is another article, but suffice to say my personal preferences run toward US Robotics for the modem (the faster the better), a 4x or faster CD-ROM drive, and a color inkjet from Epson, Hewlett-Packard or Canon (and don't buy their entry-level machines—do your research, four colors not three).

But after those essentials, which probably came with your computer, what then? Well, of course it is a matter of preference, but I would go with a sheet-fed personal scanner. These babies are hot. They are small, one sheet at a time, scanners. When you stick a piece of paper in, they grab it and the software comes up on your screen to ask if you want to copy it, scan a picture, scan text and OCR it, or scan and file it away for later use.

Some, like the Logitech PageScan Color, have color and are great for scanning personal photographs into your computer to make Christmas or business cards. There are a number of these devices, such as the Visioneer PaperPort, and they have various features but their main function is to let you get the paper off your desk and out of the filing cabinet. If you use your computer as a tool to work, process and fax, and organize, then a small sheet-fed scanner would be a good choice. They run from $400 to $600.

If you are a gamer, or have kids around, then a joystick can be a good choice. There are dozens of them on the market. It is probably best if you get one made by a big player such as Gravis or CH Products. You can buy little joysticks and big joysticks; they have large game panels and foot pedals for car racing and/or plane flying. You can buy a steering wheel if you are serious enough about your games. There are even body vests which thump your back and side to the beat of the action if you are so inclined. This category can even go more esoteric, with 3D headsets and 3D mice.

I have assumed above that your first computer has a sound card—most do. If for some reason you do not have one, get one. There are many different cards for many different budgets, and in this area, you get what you pay for. I have long been a SoundBlaster customer and the products have been good to me, so I don't mind recommending these cards.

A few things about sound cards: If you are

Continued on page **48**

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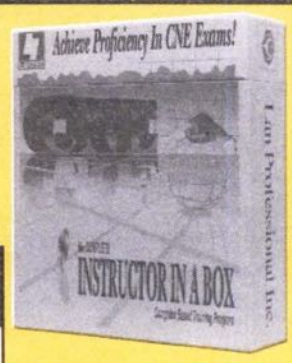

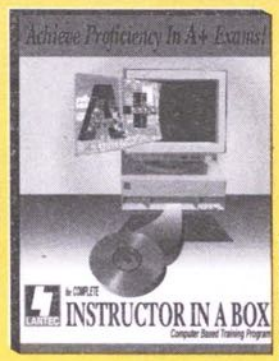

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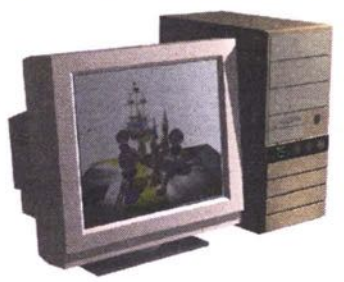

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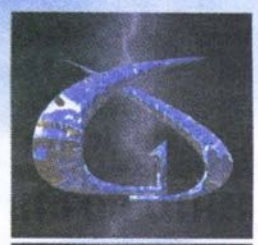

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Your first peripherals

Continued from page **46**

relatively new to the computer, have the store install it. PnP (Plug and Play) is like a United Nations resolution—they work great *when* everyone follows them.

Secondly, don't buy those little tiny, tinny, speakers that go beside your monitor—they are terrible. Either buy bigger, better computer speakers (they have a built-in power supply) or simply run the output from the sound card into a small amp, or receiver with a built-in amp, and out to regular stereo speakers. You probably have an old pair in the garage and if you hide them under the desk or behind a curtain they work great. Just remember that you must have a way to amplify the signal because the little card in your computer can't power your big, old stereo speakers.

Video, the coming thing

A whole range of peripheral products are geared toward video buffs. This is an area that you should initially stay away from, unless you have purchased your computer with this intention. There are video capture boards that will let you take the output of your VCR or camcorder and translate it into a digital format so that you can then do special effects and very accurate editing. However, you need the right software and just the right card, as well as a good SuperVHS VCR.

One inexpensive product (around $300) called Snappy will take a snapshot of a video and give you a color still picture. Useful, perhaps, to the police, but hard to justify for your home machine—unless you have kilometres of family videos, in which case you can grab still shots with the Snappy and use them in your personal greeting cards in the same way that you'd use scanned snapshots.

What about backup systems?

A consideration for your first peripheral might be a storage device of some sort. This is a tough area to recommend because there are so many offerings. You can buy a tape backup system, a Zip system, a portable hard-drive, a WORM CD-ROM drive, and many more.

If you have reams of data to secure, then go to our Web page (http://www.tcp.ca) and search back issues for any one of our storage features.

Summing up

And that is about it. There are small OCR machines that are made solely for reading business cards. You drop in a few cards and the machine attempts to read them. They work to a degree but are confused by some fancy business cards. Besides, a sheet-fed scanner will do the same job and many others.

There is a little pen that can scan and OCR text one line at a time. The ads suggest that we might all benefit from being able to grab a sentence or two out of the encyclopedia. Perhaps.

As you may have guessed, there are all sorts of other things you can hook up to your computer and there will continue to be others. I haven't even mentioned graphics tablets, plotters or the computer assisted sewing machines.

The best advice I can give to a new user is to think long and hard about the device. If you have a hard time explaining to someone why you are going to get a particular piece of hardware, you probably won't use it. ❑

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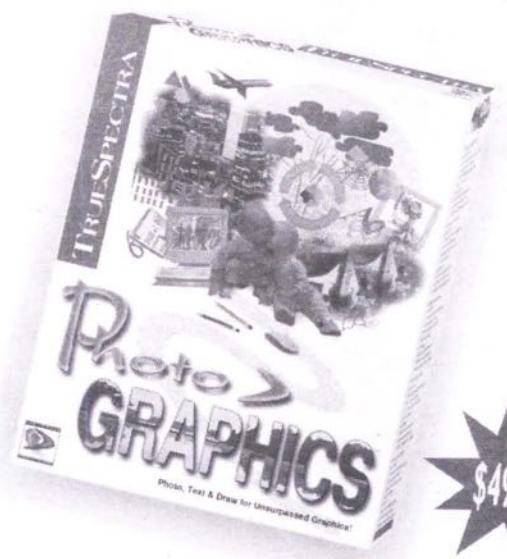

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Your first monitor

BY DAVID TANAKA

If you're about to buy a computer, you'll also have to consider a monitor. While the CPU speed and RAM and hard-drive capacity are all important, the monitor is your window on your PC, and you need to remember that monitors are not of equal quality.

If you buy one that's sub-par, the enjoyment you get and the productivity you experience with your fancy new computer will be undermined. The image may flicker, causing your eyes to tire quickly—or you might experience headaches. Pictures may appear fuzzy or lines that are supposed to be straight will be distorted.

While computers are superseded by newer, faster models every six months, a monitor will last for years. Therefore, it will pay you to do some extra research—and perhaps budget a bit more money—on this component. In two or three years, when you're ready to replace your aging Pentium, you'll still be able to use your existing monitor if you made an informed choice today.

Here are a few pointers to make sure you buy a monitor you can live with for many years:

Radiation and emission standards

Virtually all monitors today conform the the MPR II emission standard. The newer TCO 1992 is a Swedish standard that was developed in conjunction with workers unions in that country. In order to meet this standard, monitors must be well shielded for electromagnetic (EM) and radio frequency (RF) emissions. This is accomplished by including more metal shielding inside the monitor case, or by spraying parts with metallic coating, which achieves the same end. TCO 1992 is considered the strictest standard, and monitors that meet it are a bit more expensive.

Anti-glare coatings

If you see a monitor advertised as having ARAG, it means that the screen has some kind of anti-reflection (AR) and anti-glare (AG) coating. Most monitors have this feature, but be sure to check, because, like a TV set that has bad glare, a monitor that reflects back the room lighting will annoy you to no end.

EnergyStar compliant

This is a set of broad standards established in the United States to reduce the energy consumption of consumer products. Monitors that bear this sticker must consume no more than 30 watts when in suspend mode. Most monitors you buy today in Canada have passed the U.S. energy standard, and bear the EnergyStar logo.

Aperture Grill vs. Shadow Mask

There are basically two designs that monitors fall into: those that use the Sony Trinitron tube (either purchased from Sony or made from design specs licensed from Sony) and those that don't.

Trinitron-based monitors usually have some variation of "tron" in the name. You can also tell its a Trinitron-based monitor if it lists the term "aperture grill" in the description. This describes the method of separating and aligning the red, blue and green phosphors that are used to compose the image on the screen. Non-Trinitron monitors will use the term "shadow mask," which is an alternate method of separating and aligning the phosphors on the screen.

Many people claim that Trinitron-based monitors are "the best," and there's no question that they are very good. However, they tend to cost more. Moreover, the state of shadow mask-based monitors has improved, and you can get excellent results with these too—and this is the most common type of monitor.

One monitor manufacturer, Viewsonic, which makes both kinds, says Trinitron-based monitors are suitable for work that requires fine detail, like computer-aided design and drafting. It says, generally speaking, aperture grill-based monitors will be brighter and have richer colors, while shadow mask-based ones will look crisper.

Dot Pitch

Dot pitch is a measure of the fineness of the image. The most common design today is 0.28 mm, or what's sometimes referred to as a "two-eight dot pitch." Trinitron monitors don't use "dots," but the comparable specification for these will be approximately 0.26 mm.

Generally speaking, the lower the number, the better. If you come across a bargain monitor with a dot pitch of 0.38, you should pass it by.

Refresh Rate

This refers to the number of times per second a monitor is able to redraw the screen. You will want to make sure the monitor you choose has a refresh rate of at least 72 Hz at the resolution you want to use. Most monitors will be able to support this at basic VGA (640x480 pixel resolution), but lower-quality ones will drop to lower refresh rates as you increase the screen resolution to SVGA (800x600 pixel resolution) or higher.

At lower refresh rates and under some lighting conditions, you will detect a flicker in the image that will drive you and your eyes to distraction over time.

The second part of this equation is the

Continued on page **53**

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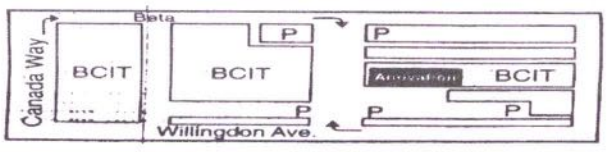

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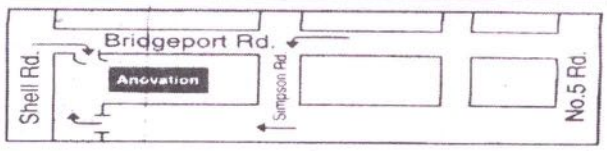

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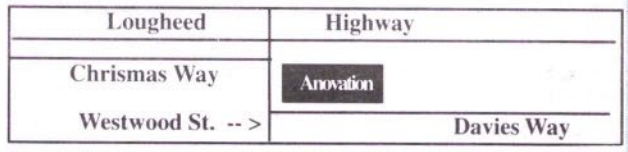

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Your first monitor

Continued from page **50**

video card (sometimes called the graphics card, video-graphics card or graphics accelerator card). On the better quality ones, you can adjust both the screen resolution and the refresh frequency—within the limitations of the monitor—to produce an image that is rock solid. A quality monitor deserves a quality graphics card.

Screen size

As a general rule, you should try to get a 15-inch monitor or larger if you can afford it. Many budget systems come with a 14-inch monitor, and you should try to upgrade to a good quality 15-incher if you're looking at one of these systems.

Whether you need something bigger than 15 inches is a matter of personal taste, need and desire, but remember that a 17-inch monitor is bigger and heavier than a 15-inch one, and a 20-incher is bigger still. If this computer is for your home, or for an office with limited desk space, keep in mind the adjustment you'll have to make with a bigger monitor. That being said, I have a 17-inch monitor both at home and at work, and it's a real luxury to be able to work and play on a big screen.

Multimedia ready

Some monitors come with built-in speakers, a microphone and other input or output jacks. The advantage is that it helps eliminate some of the clutter that accumulates on your desk. The disadvantage is that sometimes, the quality of the built-in speakers is mediocre, and not worth the extra you'll pay for the so-called multimedia monitor.

However, we've heard some that sound pretty good, certainly better than the tinny "multimedia speakers" that often come with computer systems. So the best advice is listen before you buy.

The eye test

Your own eyes are a pretty good judge of monitor quality. If a model looks bad after five minutes of testing in a store, imagine what it will be like after several hours at home. Here are two quick test you can perform in the store

- The ad hoc flicker test: Cast your gaze away from the monitor, but so that you can still see the screen with your peripheral vision. If you detect flicker or jumpiness in the screen with your peripheral vision, chances are good this monitor will bother you with continued use. (If the store uses fluorescent lights, that may make things worse.)
- Corner action: Even cheap monitors will produce a good image in the centre portion of the screen. It's what goes on in the corners and on the edges that separates the good from the not so good. Look for colors that don't quite converge. Fill the screen with text and look for portions that go soft as though they're out of focus. Also look for straight lines that bend inward or outward, and which can't be straightened with the monitor's controls, noticeable dimming or color shifts when compared to the centre, and other strange distortions. ❑

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First software for your home office

Knowing what you need before you buy

BY GEOF WHEELWRIGHT

When you think about buying software for your home office or small business, you should probably start with the simplest and oldest technology you can find: a pencil and a piece of paper.

Begin by listing all the activities you are likely to be undertaking in the office—and try to be as comprehensive as you can about it. Even if you think of something that you couldn't possibly imagine would have any relevance to the use of computers, put it on the list anyway, as you may find out differently. The strategy is that you will then take this activities list and map it against the capabilities of the personal computer system, and software (as well as add-on extras and services) that you can afford.

Begin by listing all the activities you are likely to be undertaking in the office —and try to be as comprehensive as you can about it

This process is know as "activities-based planning" and is designed to let you understand exactly what it is that you really want to accomplish before you set about the tricky task of enlisting a personal computer and some software to help realize the accomplishment.

To get some idea of how this might work, it's worth taking a look at an example. Let's say, for instance, that after a number of years of working for a house inspection agency, you decide to go it alone and start your own home inspection business.

In order to run this new business, you'll need some basics: a phone number, a fax (to send off urgent reports to clients), a way of professionally generating reports for your clients, a good record-keeping system to file all previous house reports, a reliable way to keep accounts and some method for invoicing and planning cash flow.

These are all very basic requirements and would be common to dozens of businesses that you might consider running from your home. Here's how you might go about using personal computer technology to meet the needs of this small business.

Start with the simple matter of how you want to store the names, addresses and other business details of your customers, suppliers and other vital contacts.

One of the strongest candidates for this might be a "contact management" application (such as Maximizer, Goldmine or Symantec ACT!), which not only lets you enter all the basic information about contacts that you would typically expect, but helps you in building detailed contact records.

Such records will allow you, for example, to tell a customer—while you are on a phone call with them—that it has been five years since their last home inspection and that it might be time for another. You might also have links within the contact manager to word-processed copies of the report resulting from the previous inspection, the invoice records in your accounting system and even digitally stored pictures of the customer's home.

For doing business correspondence and day-to-day reports, you will almost certainly want to use word-processing software. Many quite acceptable packages are available, but you may find that it makes sense to buy this as part of a "software suite" that would also typically include presentation graphics software, a spreadsheet for doing financial planning and statistical analysis and a database for keeping detailed records of all kinds. There are excellent examples of such applications currently available from Microsoft, Corel and the Lotus Development division of IBM.

To round out this selection of basic software, you should consider some form of specialist bookkeeping application. Among the popular choices are Computer Associates' ACCPAC and the recently revised Intuit QuickBooks and M.Y.O.B. (Mind Your Own Business) from BestWare. The size of your business will have a lot to do with your choice—and most small operations will probably find that something like QuickBooks or M.Y.O.B. should more than adequately meet their needs.

In the modern business environment, the issue of electronic communication can also not be ignored. For a lot of small businesses, one good option is electronic mail (e-mail) via an Internet service provider (ISP). There are lots of good ISPs around (including national services such as Sympatico, IBM Advantis and iSTAR as well as access from online service companies like CompuServe, America Online and Microsoft's MSN) who can set you up with e-mail.

If, however, you want to really move into the age of electronic commerce, you'll want to consider having your own World Wide Web site as part of this effort. To do that, you'll have to make sure you choose an ISP that will provide you with the space to host your own Web pages from its site.

Have a good time setting up your business and enjoy a prosperous New Year! ❑

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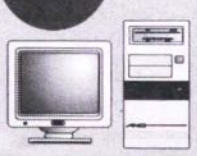

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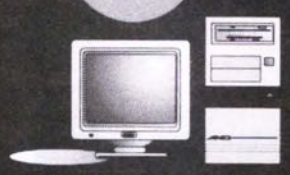

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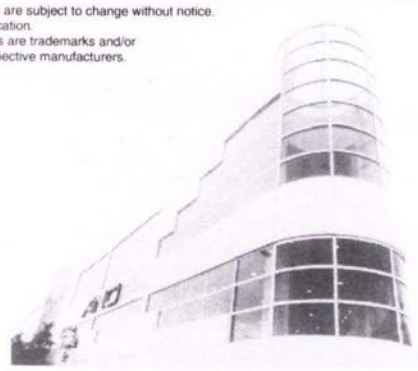

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Corel's WordPerfect way

BY GEOF WHEELWRIGHT

It's been nine months since Canadian software challenger Corel Corporation took over the stewardship of the WordPerfect family of office productivity applications. Many long-time WordPerfect users are beginning to ask if they are more confident about the future of their favorite word-processing product than they were a year ago.

For most users, the answer is probably going to be "Yes." Corel has really brought the product back from the brink of what looked like extinction late last year when Novell began shopping it around in a belated move to gain more "focus" on its core networking software business.

Since then, Corel has successfully rolled out a competent and well-received Windows 95 version of the Corel WordPerfect Office Suite and articulated a credible strategy for the future of the WordPerfect product family.

Recent history

Strong retail sales in the months immediately following the release of WordPerfect Office 7.0 also gave the company a few things to gloat about over the summer. The company said it was enthusiastic about PC Data figures for the summer that indicated unit sales of Corel WordPerfect Suite represented approximately 50 per cent of the retail office suite market for the months of June and July.

Those figures were not lost on Microsoft vice-president Pete Higgins, whose job it is to oversee the Microsoft Office suite. Higgins says that while Corel has done well with WordPerfect since buying the company, the boost in sales is little more than WordPerfect has traditionally gained from the issue of a new release of the product, but since WordPerfect sales are all now in the suite configuration, the sales that typically would have

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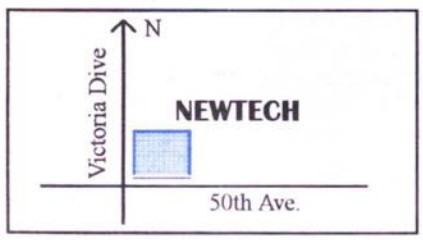

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❑ AMD DX4 -133MHz	$350
❑ AMD DX4 -120MHz	$335
❑ AMD DX4 -100MHz	$325
❑ AMD DX2 - 66MHz	$315

includes:

(assembly included)
Cache: 256K (PL for Pentium)
Memory: 4MB
Case: 13" Mini Tower (200W)
Keyboard: Win 95
Floppy Drive: 1.44MB

Options:

❑ To 512K Cache (Pentium only)	$25
❑ To 8MB(586: 2x4MB)	$31
❑ 16MB(586: 2x8MB)	$71
❑ 32MB(586: 2x16MB)	$175
❑ To Mid-Tower 15"	$5
❑ Midi-Tower 19"	$20
❑ Full Tower 25"	$42

CPUs

❑ AMD 486 DX2-66	$Call
❑ AMD 486 DX4-100 / 120 / 133	$Call
❑ Pentium 75 / 100 / 120 / 133 / 150	$Call
❑ Pentium 166 / 200	$Call
❑ Pentium Pro 180 / 200	$Call

Memories

❑ 1M 30pin	$Call
❑ 4M 30pin	$Call
❑ 4M 72pin	$Call
❑ 8M 72pin	$Call
❑ 16M 72pin	$Call
❑ 32M 72pin	$Call
❑ 4M EDO 72pin	$Call
❑ 8M EDO 72pin	$Call
❑ 16M EDO 72pin	$Call
❑ 32M EDO 72pin	$Call

MotherBoards(no CPUs)

❑ 486, 256K,PCI,72p	$113
❑ Giga-byte ATV, 256K	$165
❑ Asus T2P4, HX, 256K	$219

Video Cards

❑ ATI Video Boost PCI 2M	$109
❑ ATI TV tuner, ISA	$143
❑ ATI 3,D PCI 2M, OEM	$186
❑ Cirrus Logic 5429 VLB	$53
❑ Cirrus Logic 5446 PCI	$57
❑ Diamond Stealth PCI 2MB	$115
❑ S3 Trio 64+ PCI 1MB	$54
❑ S3 3D PCI 4MB	$130
❑ Matrox Mystique 2MB SGRAM	$234
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❑ Acer 8x	$138
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❑ NEC 8x	$148
❑ Pioneer 10x	$170
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❑ Quantum	2.5G	$408
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❑ W.D.	1.6G	$307
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❑ W.D.	2.5G	$400
❑ W.D.	3.1G	$460

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❑ Fujitsu 1.44MB	$32
❑ 1.2MB	$60

Tape / Drive devices

❑ Colorado T1000 810MB Internal	$159
❑ Zip Drive, parallel, Ext.	$250

Keyboards

❑ Win 95	$20
❑ Fujitsu 8725, 104 key	$30
❑ Fujitsu 4725, 104 key	$57
❑ M.S. Natural keyboard	$92
❑ Ergonomic keyboard	$55

Fax / Modems

❑ Supra Express 28.8 Int.	$120
❑ Supra Express 33.6 Int.	$144
❑ US Robotics 33.6 Int.	$160
❑ US Robotics 33.6 Ext.	$225
❑ US Robotics 28.8 w/ voice, full, Int.	$175
❑ US Robotics 28.8 w/ voice, full, Ext.	$258

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❑ Midi-Tower 19"	$67
❑ Mid-Tower 15"	$56
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Mice

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❑ MS 2 button J-mouse serial	$32
❑ 2 button serial mouse	$7

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❑ Acer 17"	$755
❑ ADI 4V 15"	$445
❑ ADI 5V 17"	$780
❑ Daytek 14"	$300
❑ Daytek 15" DT-1536A	$375
❑ Daytek 15" digital DT-1531	$385
❑ Daytek 17"	$730
❑ Magnavox 14"	$295
❑ Proview 14"	$265
❑ Sceptre P51, 15"	$400
❑ Sceptre J73S, 17"	$680
❑ Other model:	$Call

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❑ Canon BJC-4100	$299
❑ HP 680C	$405
❑ HP 820cxi	$520
❑ HP 870cxi	$645
❑ Epson stylus color 500	$383
❑ Other model:	$Call

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❑ SoundBlaster 16 PNP	$91
❑ SoundBlaster 32	$157
❑ SoundBlaster AWE32	$313

Network Cards

❑ PnP NE2000 Combo PCI	$50
❑ PnP NE2000 Combo ISA	$36

Other:

❑ Microphone	$8
❑ Speaker Box (amplified 60W)	$20
❑ Speaker Box (amplified 130W)	$55
❑ Win 95 CD Full, w/ new system	$114
❑ Zip disk	$18.5
❑ Various Cables	$Call
❑ Accpac GL.	$275
❑ Internet Access package	$12

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been spread over the word-processing and suite sales were all combined into an impressive summer market share for Corel.

Higgins also says Corel hasn't made any significant dent in corporate sales of suite products, where Microsoft continues to dominate with Office for Windows 95 and has great hopes for its upcoming Office 97.

Corel also did not do itself any favors with the problems it had in shipping WordPerfect Office. In mid-September the company stated that, "as a result of a combination of factors" it had experienced delays in shipping copies of Corel Office Professional 7 ordered in the third quarter of fiscal 1996. The amount of product ordered but not shipped (and therefore not included in Corel's revenue for the quarter) was approximately $15 million.

"We focus on shipping the highest quality product with the greatest functionality possible. As a result, delays can be encountered in engineering as every effort is made to include the latest functionality and to eliminate all significant bugs prior to releasing a product to manufacturing. As well, the normal pattern of sales orders in the industry results in a substantial weighting of orders to the end of a quarter," explained Corel chief executive officer and president Michael Cowpland.

"Being a multi-product company, it is frequently difficult to project accurately which particular products will be ordered in any particular quarter where there are no new releases.... All of these factors have an impact on the production scheduling. These difficulties are attributable to our continuing integration of the new products acquired by the company and all our systems and programs are under ongoing review to address and correct any deficiencies in these areas."

Gunning for the corporate market

One thing Corel expects to do more often in the near future is attract corporate customers for its products. In late August, it unveiled a strategy to give customers the choice between two corporate licensing options.

According to Corel, customers may choose to license the product only, or they may choose what the company calls the Corel Network Solution (which is basically the product plus a GroupWise Client Licence).

Corel says the Network Solution will enhance its corporate customer's office communications by providing information sharing, internal/external e-mail and scheduling capabilities as well as the ability to assign tasks, write notes and keep track of phone messages.

"This value-added approach provides corporate customers with the client licence at a reasonable price and makes it possible for them to benefit from an increase in productivity as they use the scheduling and messaging capabilities of GroupWise in their offices," says Cowpland.

The Corel Network Solution option applies to Corel's business suites, Corel WordPerfect Suite and Corel Office Professional, which are available for purchase through Corel's Corporate Licensing Program. This offer is valid for any number of users in Corel's Choice or Universal licensing programs. The GroupWise 4.1 Client Licence will no longer be included in retail copies of Corel Office Professional 7 and Corel Office Professional 3.1—which is probably no great loss, as it isn't a hugely compelling application for the average home user.

Corel brews a Java version

One of the most exciting developments so far in Corel's tenure with WordPerfect has been the emergence of a plan to offer WordPerfect Office for use with industry standard World Wide Web browsers that can handle Java code. In May, the company unveiled this scheme to create "a suite of integrated office productivity applications" written for Java.

Corel promised that the suite would include Java versions of applications based on Corel WordPerfect, Corel Quattro Pro and other productivity applications, all integrated within a new graphical user interface (GUI) framework. It pledged that this new office suite would exploit the technological experience gained by Corel from Corel WordPerfect Suite, as well as leverage the advantages of the Java platform, offering cross-platform functionality based on component architecture that is delivered online.

"Corel has been quick to embrace Java technology as a key in the company's Internet strategy, and we intend to deliver a continuous supply of software products supporting this language," enthused Cowpland. "Productivity applications based on Java technology could soon overtake Windows in volume."

The plan was for the Java-based suite to be implemented as a series of Java classes, which could allow it to be freely extensible. Additional functionality could then be downloaded as required by the user, and modular architecture does account for a small footprint.

Around the same time, Corel also ➤

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introduced Corel Barista, what it called "a core technology" that it promised would allow users of Corel Office Professional's WordPerfect 7 and Corel Ventura 7 to create documents based entirely on the Java platform, without any programming requirements.

And by mid-October, Corel was making the first public trial of Corel Office for Java by offering it for use at the Corel Web site, making it the first major office suite to be written entirely in the Java programming language.

Dubbed Corel Office for Java, Corel claims that it will "let you create spectacular office documents that are immediately publishable to your local printer, your intranet, or the Internet" without conversion or reformatting.

"Thanks to Java's platform independence, robust architecture, and object-oriented programming, Corel Office for Java is the first application suite that can provide a workgroup environment unlike any other," trumpeted the company in its announcement. "No more worrying about formats, standards, or operating systems—just portable documents that can be shared across multiple platforms in any computing environment."

Well, almost. At least the first beta version of this product is not completely portable, particularly if you use an older browser. In the preamble to the Corel Office for Java site, the company offers some warnings and caveats about what to expect— warnings that make it clear Corel is far from actually finishing this product.

"This preview provides you with a limited feature set to give you an idea of what we envision for the final version. Because you are previewing a product that is still in its development stages, you can expect to see Corel Office for Java change significantly over time. The feature set will improve, the interface may change, and Corel Office for Java will become more powerful," Corel warns. "Microsoft will be releasing an update to Microsoft Internet Explorer that will fully support Corel Office for Java. Until then, do not use MSIE Version 3.0 as it may cause your system to hang. Similarly, do not use Netscape Navigator 2.0x. For best results use Netscape Navigator 3.0 or JavaSoft's HotJava Browser."

(And indeed our preliminary tests with Internet Explorer 3.1 have been successful. —Ed)

Bring back the Mac

Another laudable development during Corel's time at the WordPerfect helm has been the release of a long overdue update to the Macintosh version of WordPerfect, something longtime Mac WordPerfect users may have started to give up on during the dying days of Novell's ownership of the products.

In August, Corel announced the updated version of Corel WordPerfect 3.5 for Macintosh and Power Macintosh. Known as Corel WordPerfect 3.5, it was actually an updated version of WordPerfect 3.5, previously shipped by Novell.

"Corel is excited about the business prospects we see for supporting the Macintosh platform. We think the Mac will play a major role in our future," said Cowpland, telling Mac users what they clearly want to hear. "WordPerfect for Macintosh has traditionally given users greater choice and flexibility in utilizing new Apple technologies and Corel will continue to be the industry leader in word processing innovation."

The new Corel package includes a collection of more than 150 TrueType fonts, 5,400 clipart images, 187 textures, 67 sounds and 200 stock photos. For managing new fonts and sounds, MasterJuggler 2.0 Pro, a font, sound and desk accessory utility, is also provided. Spanish, French and German language tools, including a spell checker and thesaurus (previously sold separately), are now also included in the new package.

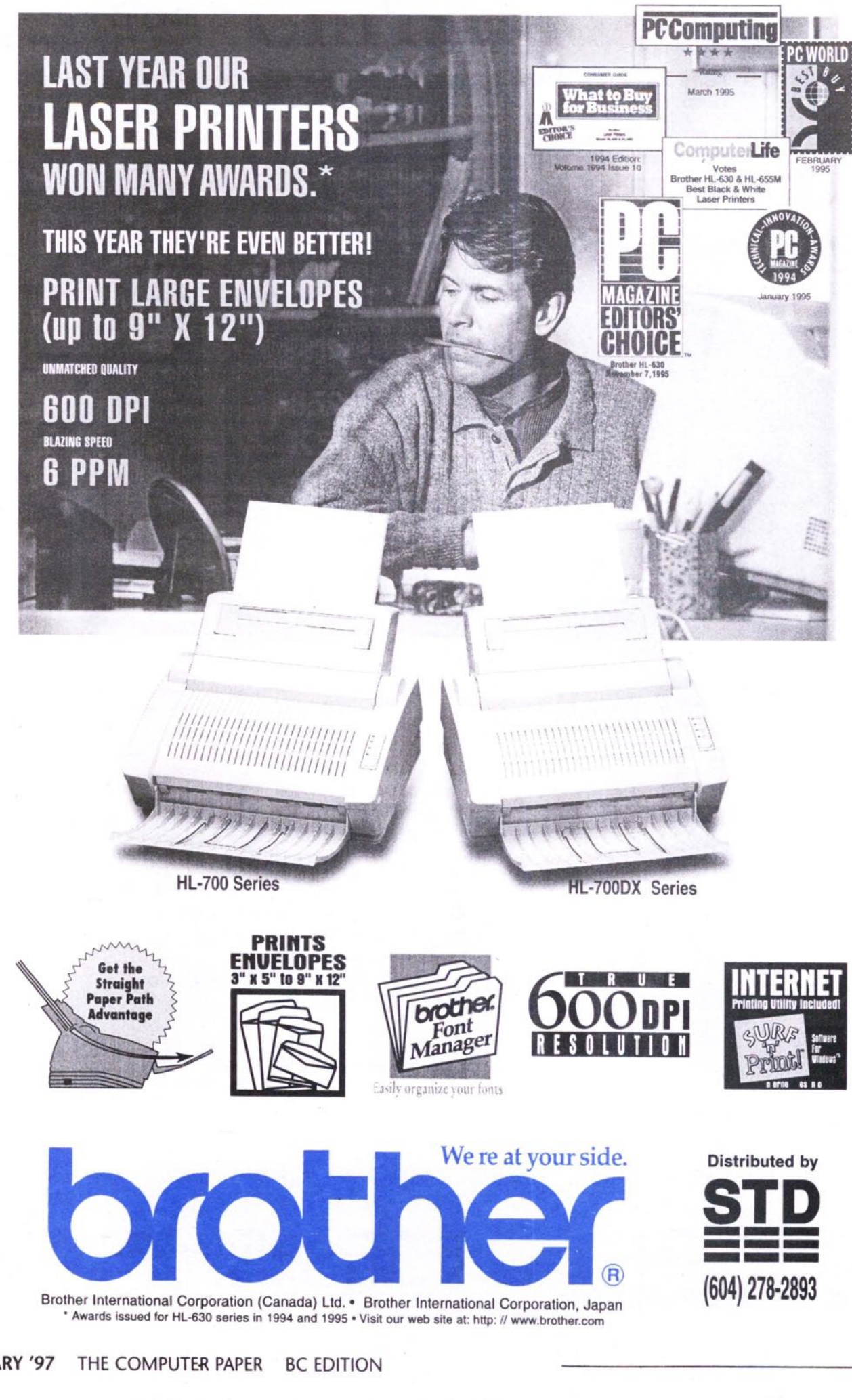
Corel says that for helping users put the Internet to work, it has included Netscape Navigator version 2.02. Updated hypertext markup language (HTML) features include an HTML button bar and macros for creating custom HTML forms and borders. Also, the HTML export now converts PICT images to JPEG format for use on the World Wide Web.

A way ahead

So, while Corel may not have re-established WordPerfect to the dizzying heights of success it once enjoyed, it is certainly a better-supported and healthier option for suite and word-processing users than it was in the hands of Novell.

Users can now buy this product, secure in the knowledge that it not only has a future, but also one that is being strongly supported by good research and development and strong links to the hottest trend on the planet—that of Internet and World Wide Web integration. ❑

Contact: Corel Corp., Web site: http://www.corel.ca



Troubled times at Novell

Continued from page **36**

the appointment of a new CEO, he may set a new style for the company.

To get a measure of this 64-year-old industry legend, you have to look at his 34-year career with HP, the last 15 years of which he served as president and CEO (from 1977 to 1992), seeing HP aggressively move into the PC arena and establishing a commanding market share for laser printers and a strong presence in the Unix and networking sectors.

He also saw the company through many difficult forays into the PC business, including many failed desktop PC entrants (including a pioneering machine back in 1984 that featured both a touch screen and early use of 3.5-inch floppy diskettes), portable computers and non-IBM-compatible DOS machines.

But what about the products?

If Novell was as good at quickly producing new network products as it is in making announcements about them, the company might never have faced its current troubles. Since mid-August, there has been a torrent of new product missives from the Novell public relations machine, the most important of which were those relating to Novell's transformation of NetWare into IntranetWare.

At the beginning of October, for example, the company revealed that it had begun shipping IntranetWare to its worldwide customer base a whole week ahead of its previously announced shipping date. The latter is a key issue for Novell, which suffered far too many industry slings and arrows for long delays in previous updates to NetWare.

Novell says IntranetWare "marks the evolution of NetWare into a full-service intranet and Internet access platform solution for businesses of all sizes." Cynics suggest it is Novell's way of trying to hop on the fast-moving intranet bandwagon, even to the extent of sacrificing its chief product

But Novell claims that this networking solution will actually enable more than 55 million NetWare customers to preserve their existing network investment while evolving their business networks to embrace Internet standards and technology. The company says it also fulfills Novell's promise to combine its networking technology with key intranet functionality.

One of the keys to this strategy is that it will basically cost customers nothing extra to buy IntranetWare, as opposed to basic NetWare 4.11. Although it will continue to sell NetWare 4.11 as a standalone product. IntranetWare and NetWare 4.11 will be available at "pricing and licence stratification" similar to NetWare 4.1.

In addition, the company says all standard upgrades to NetWare 4.1, which allowed customers to upgrade to the same or a larger user licence, will be replaced with like-to-like-only upgrades to IntranetWare.

You'll also see cheaper licences on increasing the number of users on new or upgraded licences of IntranetWare or NetWare 4.11, where they can now buy 10-, 25- or 50-user additive licences. Even more aggressively, the company is offering upgrades from competitive products through its Customer Connection program.

As a special incentive to encourage IntranetWare upgrades, Novell is also offering limited-time promotional upgrade prices to NetWare 4.x customers who wish to migrate. These special promotional prices will be available through Jan. 7.

IntranetWare?

Novell says IntranetWare incorporates all of the networking services of NetWare 4.11, such as Novell Directory Services (NDS), Symmetric Multi Processing (SMP) and core file and print services—with new intranet and Internet capabilities.

It says that these solutions include a high-performance NetWare Web Server 2.5; file transfer protocol (FTP) services, the Internet-standard method for allowing users to download files on remote servers via the Internet; Netscape Navigator; an IPX-to-IP gateway to provide IPX users with access to all IP resources, including World Wide Web pages; and integrated wide-area routing to connect geographically dispersed local area networks to a corporate intranet or to the Internet.

The GroupWise connection

And following its Sept. 12 launch of GroupWise 5, Novell further promised that in early 1997, GroupWise will deliver "an important advance to accelerate the deployment of corporate intranets."

The company claims that GroupWise will "transform" the creation and editing of Web documents and the granting of access rights from specialized IS management functions to tasks that users across an organization can easily perform.

Novell pledges that Intranet users will be able to search full-text indexes of documents rather than just uniform resource locators (URLs), and that GroupWise users will be able to create and edit documents and access rights that are automatically reflected on the Web. ❑

Contact: Novell, Web site: http://www.novell.com

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NEC 15" C500/XV+	$545/665
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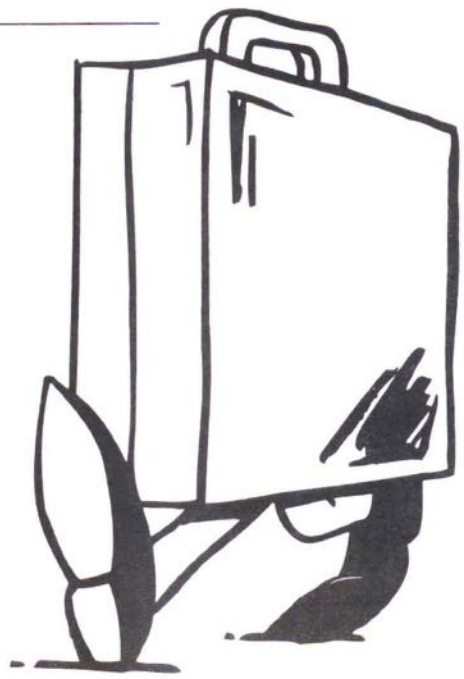
Desktop replacement notebooks

A look at the latest generation of powerful portables

BY CHRIS FISHER, STEVE HALINDA AND TIM BINGHAM-WALLIS



Models reviewed:
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Compucon
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Dell Latitude XPi P150ST
Eurocom 6200T
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Toshiba Tecra 500CDT

The choice between purchasing a desktop or a notebook computer is a common dilemma. Do you want to give up the raw power of a desktop computer for the portability of a notebook? Depending on your computing needs, the question can be a no-brainer. For many of us, the lower cost and greater performance of a full-size desktop computer far outweigh the benefits of portability. However, for people who need instant access to information in places from boardrooms to fishing boats, a notebook is a necessity. Preferably, the machine should be able to handle all the tasks demanded of the desktop computer, matching as closely as possible the specifications and performance of the latter.

This month we asked for notebook machines that can be considered replacements for the desktop PC, and we received many that fit the bill in terms of specifications. The mainstay of our survey this month are powerful 133 MHz machines configured with items such as 2 GB hard drives, 8x CD-ROM drives and TFT (also known as active matrix) screens.

However, our benchmarks suggest the latest generation of travel companions still miss the mark in the area of performance. Remember, no matter how much you spend, a desktop PC in any given class will always outpace a notebook by a large factor. On BAPCo Sysmark32, a score (Sysmark) of 100 is equal in performance to a base-configured Pentium 100 MHz desktop machine. Most of the notebooks touting higher central processing unit (CPU) speeds failed to reach this level.

Still, the notebook market has seen several incremental improvements over the last several months. Vendors are offering and shipping them with faster processors, larger screens and hard drives and faster CD-ROM drives.

Within the category of desktop replacements, there is still a great amount of diversity to be considered. Notebooks exist to fit a number of needs. For example, in this survey we have the ultra slim and lightweight ThinkPad 560 from IBM alongside the battle-proof Panasonic CF-25 and Dell's souped-up Latitude XPi 150. The ThinkPad is designed for the traveling executive, the Latitude XPi 150—with all its bells and whistles—is suited for the contemporary office, and the Panasonic is designed for heavy-duty field-work in an industrial environment.

Expandability and built-in functionality are a consideration when choosing a new

Continued on page 62

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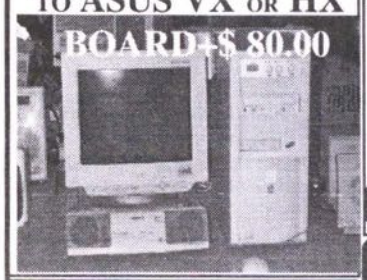

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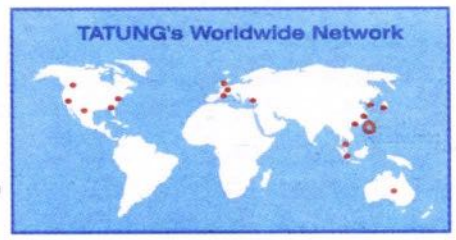

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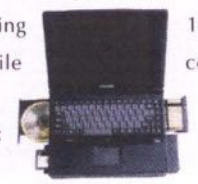

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Desktop replacement notebooks

Continued from page ***60***

notebook. Many notebooks sacrifice internal floppy and CD-ROM drives in the interest of downsizing. The reduced size of these gems can be beneficial to the commuting professional but the lack of removable storage can be an equal menace. The docking station options for a given notebook are also worth investigating, especially if you are going to use it to replace a desktop.

The pointing device is another area that bears some serious consideration. While touchpads are far and away the most widely used mechanism, they are not necessarily the best for each individual. Luckily, we still have some choice in this area with a couple of vendors offering trackballs and eraser-head type devices, which many people prefer. Some notebooks have unique options, like an infrared remote control mouse (which we've been referring to lately as the "IR wand").

There are two popular types of display screens for notebooks today—DSTN and TFT. DSTN is the cost-effective option, but it does not offer the clarity or brightness of TFT. DSTN displays are back-lit and cannot be viewed at an angle very well, whereas TFT displays produce brighter, sharper images viewable from several angles.

The tests

We used BAPCo Sysmark/32 running under Windows 95 to benchmark the notebooks. This is a grueling test and invariably, some computers fail to make it clean through the benchmark. Notebooks in particular have a hard time with the benchmark as they use more proprietary schemes than desktops. This isn't to say that a computer that can't clear the benchmark is no good, but it is indicative of possible incompatibilities between the hardware and certain software. Making sense of the benchmark results is quite easy. The higher the Sysmark32 score, the faster the system. The reference system, as mentioned earlier, is a Pentium 100 MHz system, which is equal to a score of 100. A system that scores 200 is twice as fast.

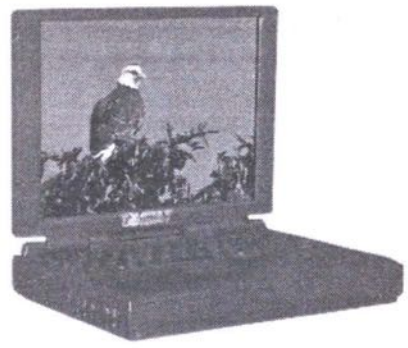
AST Ascentia P50

AST's new line of notebooks includes this model P50. A full-featured unit, it comes with a Pentium 133 MHz processor and 256K of Level-2 cache. Our test unit came with 16 MB of RAM and a large 2.1 GB hard drive. The P50's 12.1-inch active matrix screen produces sharp images at resolutions up to 800x600 internally with 2 MB of video RAM. The CD-ROM and floppy drives are interchangeable, meaning you can use them both internally, but only one at any given time.

As part of the complete multimedia experience, the system comes with built-in, 16-bit sound support and a 28.8Kbps faxmodem. It's becoming quite common for manufacturers to integrate modems into the notebook itself, thereby freeing up one PC card slot, which can be used for other devices. The P50 also has infrared (IR) capabilities, which will allow you to communicate with other notebooks or IR-capable devices without the need for cables. At $6,490, this machine is very capable, and packed with features that certainly allow us to consider it a desktop replacement.

Performance, for the most part, was on par with other notebooks in our survey, but there was a problem with one of the benchmarks as can be noted on the chart. In all likelihood, this is an incompatibility that exists somewhere between that piece of software and the computer, or a simple bug. When we encounter such a problem, we do whatever possible to overcome it by means of a workaround, however, sometimes despite our best efforts, we are still unable to get things to work 100 percent. The biggest problem when this occurs is that we aren't able to obtain an overall Sysmark for the machine. What readers should do in these cases is to look at the individual numbers and estimate what the machine would most likely score on this particular section, when taking into consideration its other scores and overall system configuration. We must stress this, because it would be neither fair nor wise to discount a particular system simply because there was a glitch with the benchmark suite.

Compucon



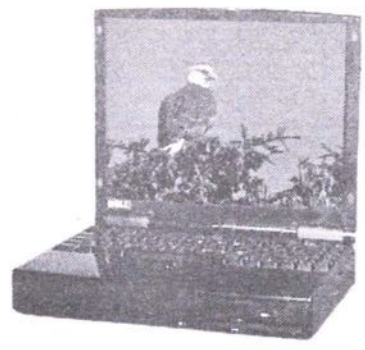
Compucon systems of the desktop variety are well known to our Test Lab. This time, however, we were sent a notebook bearing the Compucon name. At first glance, it appeared to be a good all-in-one unit. The system is powered by a 133 MHz Pentium processor with 256K of Level-2 (or secondary) cache. The RAM configuration was slightly larger than we had asked for, at 24 MB instead of 16 MB. The 12.1-inch active matrix screen is sharp and easy to read, producing clear images in both text and graphics applications at resolutions of 800x600. The system contains a 1 GB hard drive; an adequate amount of storage for most portables. Both the CD-ROM and floppy drives are internal, saving you from having to swap back and forth. While this may be extremely convenient, the tradeoff comes in the form of extra carrying weight. The price tag on the unit is $5,199.

Dell Latitude LM P133ST

Never one to break with tradition, Dell has once again provided us with two machines that are not only complete, but are extremely well priced. The LM 133 runs on a 133 MHz Pentium processor with 256K of level-2 cache, 16 MB of RAM, an 810 MB hard drive and has 16-bit sound capabilities. The 6x CD-ROM drive and floppy drive are interchangeable. The unit has a touchpad as its pointing device, two PCMCIA slots, and IR capabilities.

With 1 MB of video RAM, video resolutions up to 800x600 are possible on a sharp-looking 12.1-inch active matrix screen. The lowest-priced notebook in our survey, this Latitude LM 133 is yours for $4,099 with a one-year warranty.

Dell Latitude XPi 150ST



Dell's latest creation is the XPi 150ST. It's the very first notebook with a 150 MHz processor to have come through our Test Lab. It wasted no time making a good impression on us. Our test unit was equipped with the standard complement of 16 MB RAM, and 256K of pipelined cache. This particular model uses a trackball as its primary pointing device as opposed to the ever-popular touchpad found among many of the notebooks we've tested.

The 150ST features a built-in 6x CD-ROM drive and a built-in floppy drive, housed one on top of the other. The hard drive in this unit is larger than its cousin, the LM 133. At 1.3 GB, it'll provide you with plenty of storage while you're on the road. It's also the first notebook we've seen to come with a PCI 128-bit video controller. If graphics-related applications are your thing, then this notebook was designed for you. And it can be yours for $5,499 with a three-year limited warranty.

Eurocom 6200T

Another all-in-one system, the 6200T from Eurocom has everything you need all under one roof. At the heart of the machine is a Pentium 133 MHz processor and 256K of secondary cache, 16 MB of RAM and a 1.2 GB hard drive. Your multimedia needs are met with a built-in 8x CD-ROM drive and 16-bit sound capabilities. The floppy drive on this model is also built in for your convenience.

Continued on page ***65***

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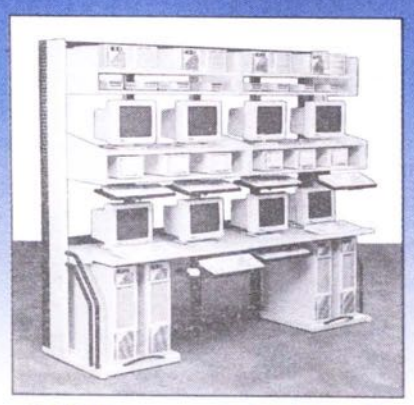

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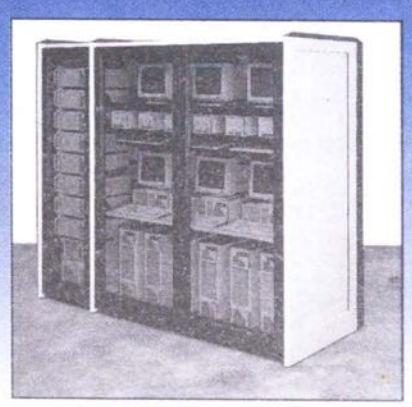

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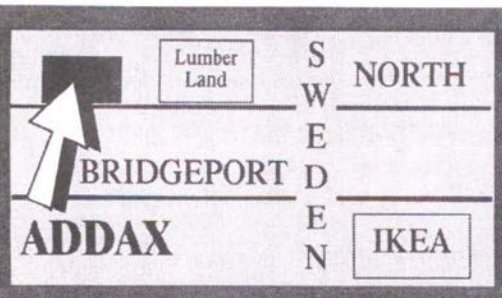

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512K pipeline Cache	54

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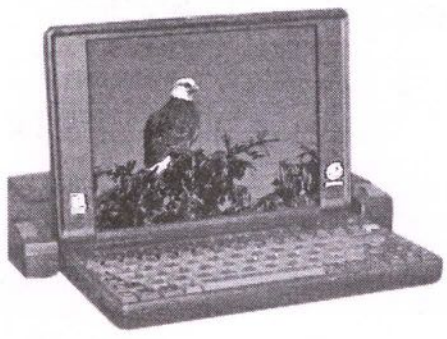
Desktop replacement notebooks

Continued from page **62**

The 12.1-inch active matrix screen can produce impressive looking images at 800x600 resolution, with 2 MB of video RAM. Whereas most notebooks give you two PCMCIA slots, Eurocom's 6200T goes a step further, offering you three. With this configuration, it's possible to have two type-II cards, and one type-III in the notebook at the same time. With standard configurations on most notebooks, you're allowed to use two type-II cards, or one type-III at the same time.

The notebook also gives you the capability of outputting your video to a television set. A port on the back of the unit makes it very easy to accomplish this—particularly useful if you're in the mood to take out your frustrations on your friends over a friendly game of Quake on your 30-inch TV. Now that's fun. Priced at $5,299, the system comes with a one-year warranty, with the option of extending to two or three years.

Hewlett-Packard OmniBook 800CT



Hewlett-Packard's latest in its OmniBook lineup is the 800 series. Our test model was an 800CT, which managed to throw a few surprises our way. When you first look at an OmniBook, you see an ultra-slim, very lightweight notebook. It's hard to imagine the power that lurks behind that gentle exterior. The 800CT is powered by a Pentium 133 MHz processor with 256K of external cache on board.

Our test unit was configured with 16 MB of EDO RAM, which is expandable to 48 MB, and a 1.4 GB hard drive. With a 10.4-inch active matrix screen, graphics quality was superb. Video consists of a 32-bit PCI chip with a 128-bit graphics controller from NeoMagic. With 1 MB of video RAM, resolutions of 1024x768 are possible when an external monitor is used.

As is common with HP OmniBooks, you get a built-in two-button mouse which pops out at the right side of the computer at the press of a button. Certainly different from touchpad devices, but very similar to a desktop mouse, except for the range of motion allowed. The mouse connects to the computer with a cord that is 9 cm (3.5 in.) long. If you happen to pull too far, don't worry—the device is completely removable.

The 800 series also features a docking station where you will find a port replicator, including SCSI-2 and SVGA-out ports, support for an industry-standard half-length 16-bit ISA card or a 32-bit PCI card. The docking system supports what is commonly referred to as "hot docking" which means that you can dock and undock the system while under power in an operating system enviroment. Due to dock's slim nature, the 4x SCSI CD-ROM and floppy drives are external.

Performance on the OmniBook was on the higher end of the scale, with an overall Sysmark of 92. The 800CT sells for $6,490 as configured, and comes with a three-year warranty.

HyperData 759MX

The second lowest-priced system in this survey, HyperData's 759MX is a great value if you're looking for a notebook that leaves little to be desired. The configuration we tested consisted of a 133 MHz Pentium processor, 256K cache, 16 MB of RAM, a large 2.1 GB hard drive and 16-bit sound. On the side of the unit, you'll find both a 6x CD-ROM drive and floppy drive built-in. The video subsystem consists of 2 MB of EDO RAM, and will allow resolutions of 800x600 internally or up to 1,280x1,024 when used on an external monitor. If your memory requirements should increase, the notebook will accommodate you with up to 64 MB of EDO RAM using four DIMM (dual inline memory module) sockets. The keyboard makes use of the popular Windows 95 keys and uses a touchpad for its primary pointing device. ➤

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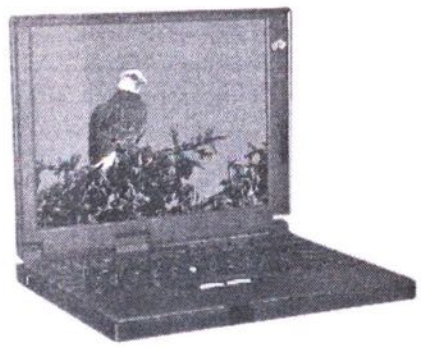
A unique option on this notebook is the ability to use an IR (infrared) remote control mouse. This comes in real handy during group presentations. The same notebook will have a 10x CD-ROM drive available by the time you read this article. Priced competitively at $4,264, the unit comes with a three-year warranty.

IBM ThinkPad 560

Looking for a lightweight, slim notebook? Consider your search over. IBM's ThinkPad 560 comes in at a mere 1.86 kg (4.1 lbs) and is only 3 cm (1.2 in.) thick. It may be light and portable, but it still packs a punch with a



133 MHz Pentium processor and 16 MB of RAM. The hard drive is 1.08 GB, the floppy is external, and it features 16-bit stereo sound. There is no compromise made as far as the display is concerned. Equipped with a 12.1-inch TFT screen, you get great looking text and graphics at the common 800x600 resolutions. It's also one of very few notebooks in this survey to make use of a trackpoint device, as opposed to the popular touchpad. Included with the system is a CD-ROM of Lotus SmartSuite 96 to help you get down to business immediately.

The only complaint we have about this machine is the fact that it lacks a Level-2 cache. We've said it before, and we'll say it again (and again and again): the Level-2 cache is a crucial part of any computer, be it a notebook or desktop. The performance gains far outweigh the money you'd save by not having one in your system. Unfortunately, due to popular demand, this notebook was very hard to come by, and arrived just after our test results were complete, which is why you'll see "N/A" (not available) instead of a result in the benchmark portion of the Lab Test chart. This attractive and very lightweight unit can be had for $6,399.

IBM ThinkPad 760ED

This new ThinkPad 760ED from IBM introduces some new features not found in other notebooks (at least not yet). The driving force behind the machine is a 133 MHz Pentium processor with 256K of Level-2 cache. The standard complement of RAM consists of 16 MB, which is expandable to a whopping 104 MB of the EDO variety. Multimedia is accom-

Continued on page **70**

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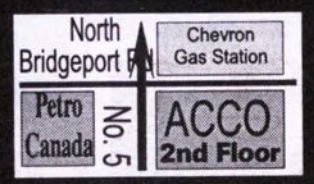

NOTEBOOK SURVEY

	AST Ascentia P50	Compucon	Dell Latitude LM P133ST	Dell Latitude XPi P150ST	Eurocom 6200T	Hewlett Packard OmniBook 800CT	Hyperdata 759MX	IBM 560
Processor	Pentium 133 MHz	Pentium 133 MHz	Pentium 133 MHz	Pentium 150 MHz	Pentium 133 MHz	Pentium 133 MHz	Pentium 133 MHz	Pentium 133 MHz
Cache	256K	256K	256K	256K pipeline	256K	256K	256K	None
MB RAM (standard/max.)	16/40	24/40	16/40	16/48	16/72	16	16/64	16/40
Screen (size/type)	12.1/TFT	12.1/TFT	12.1/TFT	12.1/TFT	12.1/TFT	10.4/TFT	12.1/TFT	12.1/TFT
Max. resolution	800x600	800x600	800x600	800x600	800x600	800x600	800x600	800x600
Video RAM	2 MB	2 MB	1 MB	1 MB	2 MB	1 MB	2 MB EDO	1 MB
Hard-disk size	2.1 GB	1.0 GB	810 MB	1.3 GB	1.2 GB	1.4 GB	2.1 GB	1.08 GB
CD-ROM drive	Removable	Internal	Removable 6x	Internal 6x	Internal 8x	External 4x SCSI	Internal 6x	None
Floppy drive	Removable	Internal	Removable	Internal	Internal	External	Internal	External
Audio	16-bit	16-bit	16-bit	16-bit	16-bit	16-bit	16-bit	16-bit
PC Card slots	2	2	2	2	3	1	2	2
Keyboard	87 key	86 key	87 key	85 key	86 key	85 key	86 key	85 key
Pointing device	Touchpad	Touchpad	Touchpad	Trackball	Touchpad	Pop-out mouse	Touchpad	Trackpoint
Dimensions, WxDxH cm	30x22.8x5.5	29.5x23.1x5.7	29.7x22.7x4.8	28.1x23.3x7.8	30.2x23.4x5.3	28.2x13.3x3.8	30.2x23.6x5.6	29.8x22.2x3
Dimensions, WxDxH in.	11.38x8.98x2.15	11.6x9.1x2.25	11.7x8.9x1.9	11.06x9.19x3.09	11.8x9.2x2.1	11.1x7.2x1.5	11.7x9.3x2.2	11.75x8.75x1.2
Palm rest, cm (in.)	6.4 (2.5)	10 (4)	7.4 (2.9)	9.5 (3.75)	8.9 (3.5)	None	7 (2.75)	(7.9) 3.1
Weight, kg (lb)	3.2 (7.1)	2.8 (6.16)	3.1 (6.82)	3.3 (7.3)	3.7 (8.14)	3.74 (8.25)	3.5 (7.7)	1.9 (4.1)
Battery type	Lithium ion	NiMH	Lithum ion	Lithium ion	NiMH	Lithium ion	NiMH	Lithium ion
Infrared port	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Extras	Internal 28.8 modem	Video-to-TV port			Video-to-TV port		IR mouse	
Windows Benchmarks		N/A						
Desktop publishing	86	N/A	77	78	73	85	65	N/A
Desktop graphics	123	N/A	119	111	149	110	84	N/A
Desktop presentation	N/A	N/A	74	96	67	97	75	N/A
Word processing	90	N/A	75	79	71	88	67	N/A
Spreadsheet	108	N/A	107	106	90	106	77	N/A
Database	86	N/A	83	71	65	79	61	N/A
Overall Sysmark32	N/A	N/A	85	90	77	92	71	N/A
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NOTEBOOK SURVEY

	IBM 760ED	Impulse Duonote	KTX 880 100MHz	KTX 880 133MHz	NEC Versa 4230	NEC Versa 6030H	Panasonic CF-25	Toshiba 500CDT
Processor	Pentium 133 MHz	Pentium 133 MHz	Pentium 100 MHz	Pentium 133 MHz	Pentium 133 MHz	Pentium 133 MHz	Pentium 133 MHz	Pentium 120 MHz
Cache	256K	256K pipeline	256K	256K	256K	256K	None	256K pipeline
MB RAM (standard/max.)	16/104	16/48	8/80	16/80	8/40	16/48	8/72	16/144
Screen (size/type)	12.1/TFT	11.3/TFT	10.4/TFT	12.1/TFT	10.4/TFT	12.1/TFT	10.4/TFT	12.1/TFT
Max. resolution	1,024x768	800x600	800x600	800x600	800x600	800x600	800x600	800x600
Video RAM	2 MB	1 MB	1 MB	1 MB	1 MB	2 MB	1 MB	2 MB
Hard disk	2.1 GB	2.1 GB	1 GB	1 GB	1 GB	1.2 GB	1.3 GB	1.2 GB
CD-ROM	Internal 6x	Docked 6x	Removable 6x	Removable 6x	Removable 6x	Removable 6x	None	Removable 6x
Floppy drive	External	External	Removable	Removable	Removable	Removable	Internal	Removable
Audio	16-bit	16-bit	16-bit	16-bit	16-bit	16-bit	16-bit	16-bit
PC Card slots	2	2	2	2	2	2	3	2
Keyboard	85 key	86 key	87 key	87 key	83 key	83 key	87 key	82 key
Pointing Device	Trackpoint	Touchpad	Touchpad	Touchpad	Touchpad	Touchpad	Touchpad	Trackpoint
Dimensions, WxDxH cm	29.7x21.1x5.1	30x21.8x5.8	29.8x23.5x4.6	29.8x23.5x4.6	29.7x23.9x5.3	29.7x24.1x5.5	30x23.6x6.1	30x23.6x5.8
Dimensions, WxDxH in.	11.7x8.3x2.0	11.8x8.6x2.3	11.75x9.25x1.8	11.75x9.25x1.8	11.69x9.4x2.1	11.69x9.49x2.17	11.8x9.3x2.4	11.8x9.3x2.3
Palm rest, cm (in.)	4.8 (1.9)	8.4 (3.3)	8.6 (3.4)	8.6 (3.4)	8.3 (3.25)	8.3 (3.25)	9.5 (3.75)	8.9 (3.5)
Weight, kg (lb)	3 (6.7)	3.1 (6.8)	2.9 (6.38)	2.9 (6.38)	3 (6.58)	3.2 (7.1)	3.2 (7.1)	3.6 (7.9)
Battery type	Lithium ion	Lithium ion	NiMH	NiMH	Lithium ion	Lithium ion	NiMH	Lithium ion
Infrared port	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Extras	Int. 28.8 DVSD, DSVD	Int. 28.8 modem Int. 10BaseT				Internal 28.8 modem		Internal 28.8 modem
Windows Benchmarks								
Desktop publishing	90	81	67	89	78	85	N/A	66
Desktop graphics	111	116	66	86	93	116	N/A	89
Desktop presentation	104	101	78	98	89	104	N/A	77
Word processing	88	88	73	102	84	90	N/A	68
Spreadsheet	117	115	68	105	102	117	N/A	87
Database	85	82	72	84	85	86	N/A	65
Overall Sysmark32	99	98	70	91	87	100	N/A	75
Contact	800-465-7999	800-668-1111	905-948-0000	-905-948-0000	800-366-0476	800-366-0476	800-742-8086	800-387-5645
Suggested retail price	$8,991	$5,495	$3,290	$4,590	$5,129	$6,589	$6,000	$6,299
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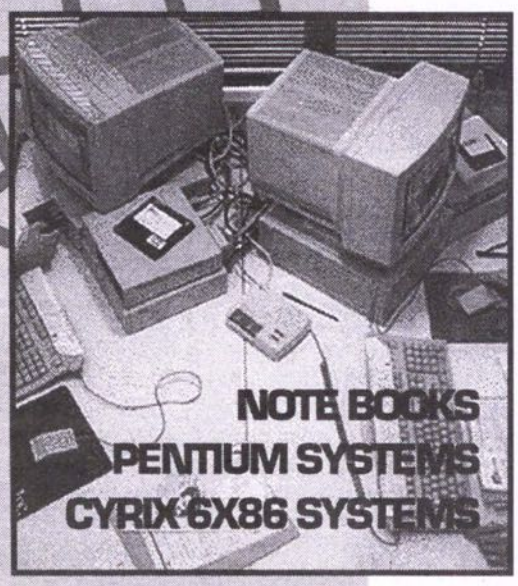

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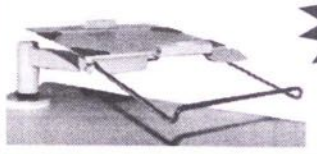

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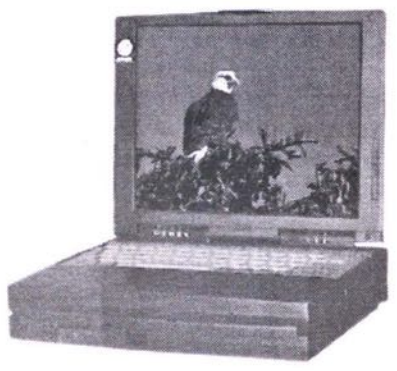
plished with an internal 6x CD-ROM drive and 16-bit sound system. The first thing that excited us about this notebook was the video system. The large 12.1-inch TFT display is not only sharp and vibrant, but thanks to a well-designed graphics engine, the 760ED can produce images of up to 1,024x768 internally (without the need of a monitor). Total Image Video with MPEG-2 support gives you smooth, full-motion, full-screen videos for a superb multimedia experience.

After we'd finished raving about all that, we discovered the built-in 28.8Kbps faxmodem. We thought, hey, another bonus. After further investigating, we were surprised to learn that it was in fact a DSVD (digital simultaneous voice over data) modem. In case you're wondering, that means you can be online with someone who also has a DSVD modem while talking to them at the same time over the same phone line. It also features a full-duplex speakerphone, digital answering machine and remote message retrieval. If you want a true desktop replacement notebook, this is it. But all that power doesn't come cheap. The 760ED sells for $8,991.

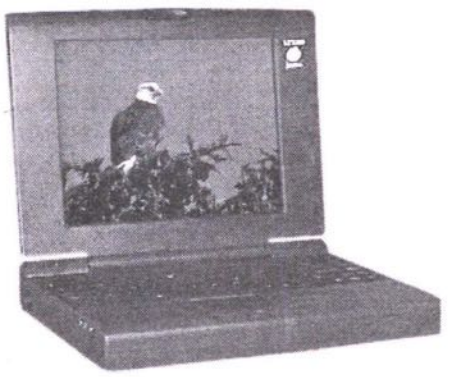
Impulse Duonote



Want it all without completely blowing your budget? Take a look at this new Duonote from Impulse Computer Corporation. Whether you want a large 2.1 GB hard drive, or a built-in 28.8Kbps faxmodem, this Duonote has it all. How about built-in, 10BaseT networking capabilities? Not a problem. And the main unit itself weighs a mere 2.1 kg (4.7 lbs). If it sounds like we love this notebook, it's because we do. This unit is probably the closest thing you'll get to a true desktop replacement with all the bells and whistles to go along with it. Driven by a Pentium 133 MHz processor, 256K of Level-2 cache and 16 MB of RAM, this machine wasted no time soaring through our grueling benchmark suite. The main unit can be docked on a MultiNet Mobile Station, which houses a built-in 6x CD-ROM drive, a removable floppy drive, the 10BaseT connection, and a port replicator consisting of an external monitor port, serial and parallel ports, a MIDI/game port, and dual retractable stereo speakers. The Mobile Station itself weighs only 900 g (2 lbs) and is less than 2.5 cm (1 in.) thick. The video system consists of an 11.3-inch TFT screen capable of 800x600 resolution with 1 MB of video RAM. A very complete package, with a very competitive price of $5,495 and a three-year warranty. (Having to part with this little gem is one of the hardest things I've ever had to do. Hmm, when's that next notebook survey scheduled?—SH)

KTX 880-100 and 880-133

New contenders in our Test Labs, KTX notebooks are distributed worldwide by Edge Wholesale Ltd. Both models we received were identical on the outside, with differences in processor speeds and screen types.



The two models were tested with 16 MB of RAM (expandable to 80 MB), 256K of level-2 cache, and 1.0 GB hard drives. The 100 MHz model features a 10.4-inch active matrix screen, whereas the 133 MHz version comes with a larger 12.1-inch version, also active matrix.

Both systems come standard with 6x removable CD-ROM drives and 16-bit audio capabilities. Both systems are priced competitively, with the 100 MHz model being $3,290, and the 133 MHz system at $4,590. The warranty is two years for parts and labor, and applies internationally, wherever Edge distributors are found.

NEC Versa 4230

We managed to squeeze this NEC 4230 in just before going to press. For the most part, it's very similar to its cousin, the 6030H (reviewed below), with differences being in the form of smaller-sized components.

The processor is still 133 MHz, but RAM is 8 MB as standard. The screen is a 10.4-inch TFT, capable of internal resolutions of 800x600 with 1 MB of video RAM. The unit comes with a 1.0 GB hard drive, and removable 6x CD-ROM and floppy drives. Performance was slightly less than the 6030H, which is anticipated due to the 8 MB of RAM. The price on the 4230 is $5,129 with a one-year warranty.

NEC Versa 6030H

One of NEC's latest is this 6030H. Featuring a Pentium 133 MHz processor, this fine machine managed to come out on top in terms of raw performance on our benchmark suite. Additional specs include 256K of Level-

2 cache, 16 MB of RAM expandable to 48 MB, a 12.1-inch TFT display, 2 MB of video RAM, a 1.2 GB hard drive and 16-bit stereo sound. The 6x CD-ROM and floppy drives are interchangeable. For your communication needs, the system has IR capabilities and a built-in 28.8Kbps faxmodem, which leaves two PCMCIA slots free for other peripherals. All in all, the unit is fast, complete, and priced so it's not totally out of reach at $6,589 with a one-year warranty.

Panasonic CF-25

Known around our Test Lab as "the road warrior," this latest creation from Panasonic gives new meaning to the term "heavy duty." At first glance, you'd think you were looking at a piece of military hardware. Designed to withstand some serious abuse, the CF-25 is reportedly capable of sustaining a drop onto a concrete floor from 90 cm (3 ft.) above ground. We say reportedly because we didn't have the nerve to try it, however tempting it may have been. The unit features a strong magnesium alloy outer shell with impact-dampening gels placed inside the machine to protect the vital components that would normally not be able to take any abuse, especially your precious hard drive.

The LCD screen is protected by a rubber ring seal as well as the previously mentioned gel. Because of its design, the CF-25 is resistant to dust and water, making outdoor computing all the more appealing. Upon close inspection, we've verified what Panasonic claims with regards to having sealed all major points of entry for dust and water. These include the keyboard, the LCD display and all ports. As far as the inside of the machine is concerned, it features a Pentium 133 MHz processor, 8 MB of RAM (expandable to 72 MB), a 1.3 GB hard drive and three PCMCIA slots. The screen is a 10.4-inch active matrix TFT capable of resolutions up to 800x600. This was another unit that unfortunately arrived late (once again due to popular demand) and therefore has no scores listed on our charts. According to Panasonic, the unit with the above configuration is available immediately for just under $6,000.

Toshiba Tecra 500CDT

Notebooks seem to be very popular items these days, making demo units hard to come by. This was the case when we requested a Toshiba model. As notebooks become more and more powerful, the demand by journalists for demo units grows. We were unable to obtain a 133 MHz model, so we went with the 500 CDT which features a 120 MHz CPU. The system has 256K of pipeline burst cache, 16 MB of RAM expandable to 144 MB, and a 1.2 GB hard drive. The multimedia components in the unit include built-in, 16-bit stereo sound, and a removable 6x CD-ROM drive. The floppy drive and CD-ROM drive are interchangeable. The screen is a 12.1-inch active matrix, with resolutions up to 800x600, using 2 MB of video RAM. Also included in the unit are IR communications capabilities and a built-in 28.8Kbps faxmodem. Performance was above average, considering that the processor was 120 MHz. This model is available as described above for $6,299 with a three-year warranty.

BENCHMARK TESTS
The COMPUTER PAPER
Editor's CHOICE

Performance
The award for best overall performance goes to our fastest system in the survey, the NEC Versa 6030H. Priced to be a viable option, this model is complete, making it a good solution for business computing.

Price/Performance
The most bang for the buck definitely goes to Impulse. The Duonote we tested was everything we were looking for in this survey on desktop replacement notebooks. It has all the features you could ask for at a price that makes it attainable.

Overall Value
The lowest-priced notebook in our survey came from Dell. Its model LM P133 is a good performer, feature-rich, and priced for home or business. ❑

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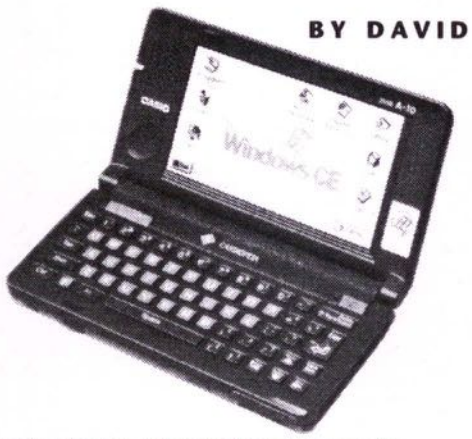
Cassiopeia palmtop a charmer

Casio employs Windows CE in new handheld PC

BY DAVID TANAKA



Product: Cassiopeia handheld personal computer
Models: A-10 (tested) with 2 MB RAM, and A-11 with 4 MB RAM
From: Casio Canada
Suggested retail price: $699 ($899 for the A-11)

Windows has come to the palmtop computer—or is it that palmtops have come to Windows? In a sense, both are true. Microsoft, with its Windows CE 32-bit operating system, and several manufacturers have joined forces to create the handheld personal computer, or HPC, the latest variation on computers that fit in your pocket.

What it means is that if you are a Windows 95 user, you can now buy a palmtop computer from one of several manufacturers and be greeted with a graphical interface you'll immediately recognize and be comfortable using. If you're a Microsoft Word, Excel or Schedule+ user, you'll also get a set of applications that will be familiar to use and compatible with the full-blown versions residing on your Windows 95 desktop computer. And, if you want to synchronize your organizer files, or move spreadsheets or word-processing documents between your handheld device and your desktop PC, a slick serial cable-based (or infrared) transfer utility is included.

The subject of this review is the Cassiopeia A10 from Casio Canada Ltd., one of the first companies to bring a Windows CE product to market.

Windows CE, what's that?

Windows CE is a 32-bit operating system that uses a graphical interface, which closely resembles the Windows 95 and NT 4.0 desktop. It uses a subset of the Win32 API, which means that Windows 95 software developers should be able to develop applications for Windows CE devices with tools they are already familiar with—but within the constraints of the smaller environment. And by the way, the CE doesn't stand for anything officially, but speculation is that it could stand for Compact Edition, or Consumer Electronics.

You might think of CE functionally as a stripped-down version of Win 95. Many of the features are there on CE, but the subtleties or breadth of customizability are lost. For example, TCP/IP is supported, which means you can use a Windows CE device on the Internet (and in fact, both an Internet mail program and Microsoft's Pocket Internet Explorer Web browser are included with the Cassiopeia). However, only PPP is supported, so if your service provider uses some other dial-in protocol such as SLIP, you're out of luck.

Instead of using a mouse to navigate, you can use a stylus on the touch-sensitive screen to double-click, drag or highlight items (you can also use keyboard shortcuts and a Windows key is included on the Cassiopeia). Since there's no mouse, right mouse button functionality is accomplished by depressing the ALT key and tapping with the stylus, although the functions are limited.

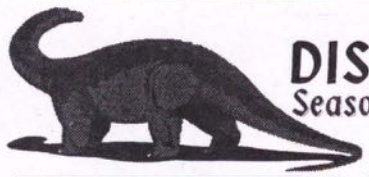
The Windows 95-style interface will undoubtedly be a major selling feature on these devices. However, the scale of the Windows elements has its advantages as well as some drawbacks on a device with such a small screen. On the positive side, the controls are large enough to manipulate with your fingertip, so you don't always have to use the stylus for navigation. But the size of those elements also has its drawbacks. The task bar, main menu bar and scrolling bar are about the same width as on my Windows 95 desktop displayed on a 17-inch monitor when it's set at a resolution of 1,024x768. This means that, comparatively, those controls are taking up a lot of screen space on the Cassiopeia. On Windows 95, you can use the auto-hide option to clear the task bar off the screen when it doesn't have to be accessed. In Word for Windows 95, you can invoke the clean-screen option, which hides all the menus and tool bars. On Windows CE or Pocket Word, these are not available—pity.

But given the constraints of the hardware (limited RAM, small screen dimensions, lack of hard drive, etc.), Windows CE works. Individuals will quibble over what Microsoft chose to leave out of the operating system or how it implemented certain features, and my quibbles will be different than someone else's. However, if you want a handheld computer that looks and sort of acts like your Windows desktop PC, and you are willing to live with the limitations inherent in these small devices, you'll probably be happy with one of these new HPCs.

When Microsoft was working with hardware manufacturers, it defined a minimum set of features it wanted all Windows CE palmtops to include, among them a 480x240 pixel monochrome screen capable of showing four levels of grey, at least 4 MB of read-only memory capacity, at least 2 MB of RAM capacity, infrared support and a PC Card slot.

Enter Cassiopeia

The above specifications aptly describe the Cassiopeia A-10 (an A-11 is also available, coming with 4 MB of RAM instead of the A-10's 2 MB). Physically, the Cassiopeia is about the same size as a Psion 3c, Hewlett Packard 200LX or Sharp Zaurus, three of its main ➤



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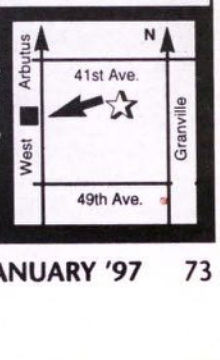

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competitors. It measures 2.65x17.5x9.2 cm (1x6.9x3.7 inches) and weighs 380 g (13.4 oz) with batteries.

The Cassiopeia is powered by an Hitachi SH-3 RISC processor, which is also being used by most of the other HPC manufacturers. (Philips is using its own TwoChipPIC processor in the Velo, and NEC is powering its MobilePro with an NEC Vr4101 MIPS RISC chip.)

Performance is leisurely, with the hourglass showing up briefly every time you load an application or access a file. It feels kind of like Windows 95 on a 486 with 8 MB of RAM. However, the instant-on feature means you don't have to wait while Windows boots up, and both Word and Excel load much more quickly than the Windows 95 versions of those applications. Moreover, you can leave items like your appointment calendar or contact database running, and they are instantly available when you turn the machine on.

The keyboard is no worse, but no better, than ones found on other palmtops, which means it is awkward, but usable if you master a two-finger pecking style. For example, I did manage to work for about an hour on this report on the flight back from Las Vegas without becoming too frustrated, and I know of one reporter who regularly composes 1,000-word stories on his Psion. The feature I like most on the Cassiopeia is the backlit screen, which allowed me to work in the darkened cabin of the evening flight with the screen completely visible.

Apps you can use

The Casio unit comes with Windows CE, Pocket Word, Pocket Excel and a personal information manager in ROM. These are immediately available for you to use as soon as you turn on the unit. In the interests of saving screen space, both Pocket Word and Pocket Excel combine parts of the menu bar and tool bar into a single row.

Pocket Word includes basic text formatting abilities, such as bold, italic, underline, centering; and the ability to change typefaces and sizes. There are no stylesheets, although you can toggle between normal and outline views. Also not included in the Pocket versions are a spell checker and thesaurus. What I miss most with Pocket Word, however, is a word counter—and you can't use the old trick of searching and replacing spaces to get a rough word count, because although Pocket Word will do this task, it won't tell you how many replacements it made.

Pocket Excel includes a good set of formulas, the ability to format cells and also supports multi-sheet workbooks. I'm not much of a spreadsheet user, but I've loaded a couple of small spreadsheets I use regularly into the Cassiopeia, which is very handy to have. On the downside, the small screen allows only a limited number of columns to be shown, so I have to scroll around a lot to find the information I need.

Along with the built-in applications, the Cassiopeia also ships with a Windows CE CD-ROM, which contains the applications you load onto your Windows PC to communicate with the Cassiopeia. The main application is the HPC Explorer, which recreates the Cassiopeia's screen on your PC and allows you to remotely control the Cassiopeia from the Windows desktop on your PC. The CD also contains an updated version of Schedule+ for your desktop, Pocket Internet Explorer, and an Internet mail application.

Once you've installed HPC Explorer on your personal computer, transferring files between the Cassiopeia and the PC is a simple matter of dragging files in and out of the HPC Explorer window. Because Pocket Word and Pocket Excel use a different file format than the full-blown versions, a file conversion process occurs automatically during file transfer. File synchronization between Schedule+ on your PC and the PIM modules in the Cassiopeia, on the other hand, is automatically done each time you connect the two units together.

The synchronization utility also creates an archive on your PC, in case calamity befalls your Cassiopeia. I pulled the two AA main batteries and lithium backup out of the unit to simulate complete battery failure. When I reinstalled the batteries, and hooked the unit to the PC, the files were restored from a special archive with no particular bother.

Pocket Web browser

I also loaded the optional Pocket Internet Explorer on the Cassiopeia, and am happy to report that setting up my Internet service and logging on took less than five minutes. I inserted a Fujitsu 28.8 PC Card modem, which the Cassiopeia auto-recognized, and after setting up the "make new connection" dial-up utility (which is similar to the one found in Windows 95), it was a simple matter of dialing in, and then launching the Web browser.

However, be warned that the current generation of PC Card devices will tax the handheld device's two AA batteries severely. The factory installed batteries had only about two hours' use when I first attempted to use the modem, and within five minutes, were drained. After loading a fresh set, I managed to use the modem for about five minutes, and the battery meter still read "good."

When you turn the Cassiopeia on after inserting the PC Card modem, you are greeted with a warning dialog, pointing out that the device will be hard on your batteries, and you should use an AC adapter. Unfortunately, the AC adapter is an extra-cost option with the Cassiopeia.

However, short battery life is not a problem specific to the Cassiopeia. Under normal use, the Cassiopeia's batteries are rated to last about 20 hours.

Where are the other applications?

Microsoft had set up a special Windows CE section in its pavilion at Fall Comdex, and invited several palmtop manufacturers and a dozen and a half third-party software, peripheral and accessory vendors to participate. Microsoft says that nearly 100 third-party vendors have stated they will be creating products for these devices. I noted a couple of handwriting recognition products, wireless data modems (including one from Burnaby, B.C-based Infowave), memory card products, and vertical applications such as forms design applications.

You can expect application development to accelerate, now that the hardware is actually available. Already posted on Microsoft's Windows CE Web page is a 1.1 version of Pocket Internet Explorer, and Powertoys, which includes a few bells and whistles, a paint program.

Summing up

While there are a few features I'd like to see added to or changed on the Cassiopeia and on Windows CE, overall it's a terrific first effort, and immediately usable out of the box. ❑

Contacts: Casio Canada, Tel: 416-431-3747.
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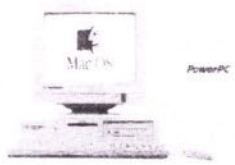

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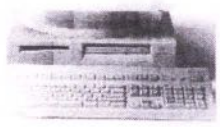

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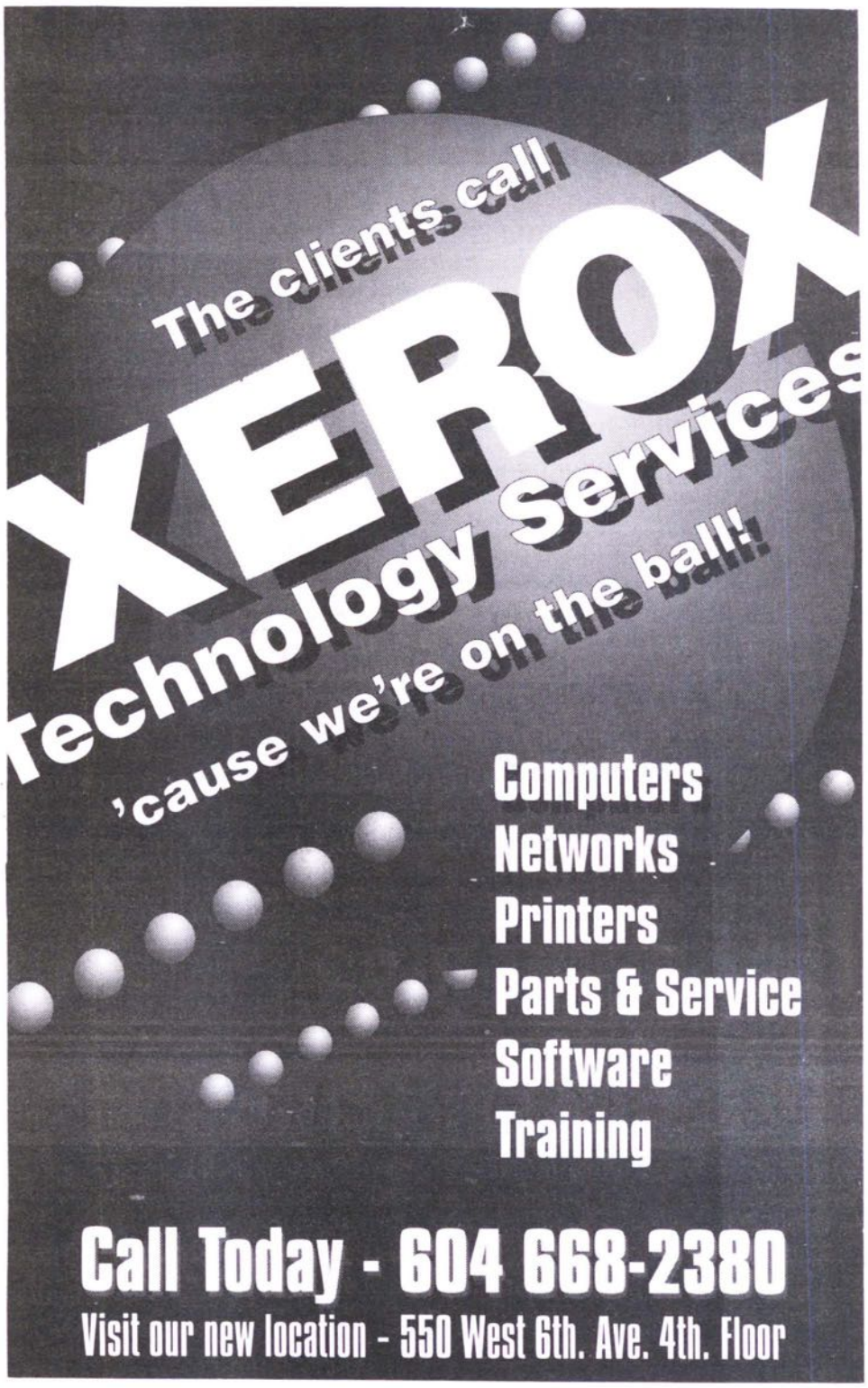

Windows for palmtop computers arrives

Microsoft sees smaller, faster OS used in range of entertainment and communication devices

BY GEOF WHEELWRIGHT

Microsoft Windows has come to handheld computers. After six years of domination in the desktop and notebook computer markets, software giant Microsoft has finally found a way to produce a version of Windows that it says is small enough, fast enough and flexible enough to run on a handheld computer. Casio and others companies delivered handheld systems (or HPCs, as Microsoft calls them) to retail stores during the Windows CE introduction at Fall Comdex in November.

Known as Windows CE, this is a new version of the Windows operating system that Microsoft says will not only be used in the handheld devices that were launched by a number of key consumer electronics companies at the annual Comdex computer trade fair in Las Vegas in November, but will also find its way into a range of communications, entertainment and mobile-computing devices that can communicate with each other, share information with Windows-based PCs, and connect to the Internet.

Microsoft says that more than 50 leading hardware and software companies have now committed to developing handheld PC products based on the Windows CE platform, including Compaq, Hitachi, Casio, Hewlett-Packard, LG Electronics of Korea, NEC and Philips.

RISC powered

These systems won't necessarily be running on Intel chips. In September, NEC Electronics and Microsoft announced that NEC's new VR4101 processor—a single-chip, high-speed, low-power 64-bit MIPS RISC device—would be able to run Windows CE and was expected to be used in many CE-based devices.

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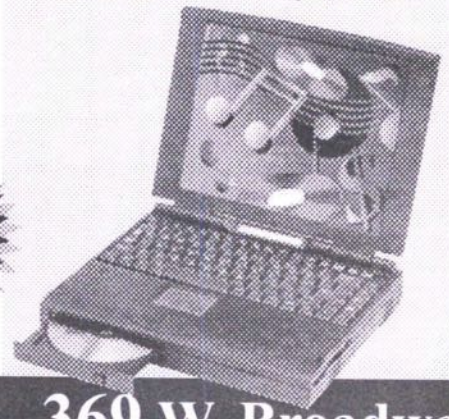

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NEC and Microsoft announced that the VR4101, the latest in NEC's MIPS RISC processor range, was one of Microsoft's key reference platforms in the development of Windows CE, and that NEC engineers were assigned to the Microsoft campus in Redmond, Wash. during the development of Windows CE.

"We have worked closely with Microsoft for two years to create a new processor optimized for Windows CE," says Katsu Itagaki, advanced engineering marketing manager for NEC Electronics. "Together, the NEC VR4101 MIPS RISC CPU (central processing unit) and Windows CE will set a new standard and allow system manufacturers to create an effective generation of handheld personal computers."

NEC says the VR4101 processor is optimized to provide Windows CE-based HPCs with a high-throughput, low-power-consumption device. The 64-bit MIPS RISC processor claims 33 VAX MIPS performance and 132 MIPS/Watt performance at

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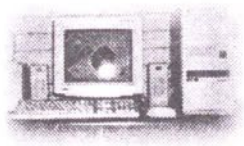

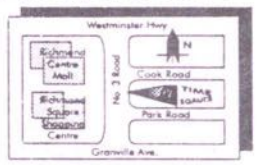

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3.3 volts (V) and further aims to provide many of the functions required by handheld PC manufacturers, such as modem capability and access to peripherals like the LCD screen, infrared interface, audio interface, memory and keyboard in a single chip.

In addition, NEC suggests that the VR4101 CPU also offers several advantages as a single-chip solution for HPCs. One highly touted feature is its high-speed multiply-and-accumulate (MAC) component. The MAC enables DSP-like instructions, so that using software emulation, the VR4101 device can act as a modem chip as well as the CPU. This saves a manufacturer cost, space and power in developing a communications-enabled portable device without a separate modem or communications chipset.

Microsoft has also worked with Hitachi to include support for its RISC microprocessor in Windows CE. Hitachi also says it is providing its 32-bit SuperH RISC architecture-based SH-3 microprocessor as a "key engine" for the Windows CE platform for handheld PCs. The operating system has been ported to the SH-3, and as part of the collaboration, the development environment and Microsoft's Visual C++ language tool chain are available for use with the SH-3. Several major original equipment manufacturers of Windows CE-based handheld systems have selected the SH-3, including Casio, Hewlett-Packard, LG Electronics and Hitatchi itself.

In making the announcement about the relationship between the two companies, Tsugio Makimoto, executive managing director in charge of electronic components operations at Hitachi, waved the company flag and suggested his company's processor really provides the best support for all the goodies in Windows CE.

"This important collaboration will make available to the consumer, handheld and consumer appliance platforms that are designed for convenience and simplicity, including features such as long battery life, built-in communications and Windows compatibility. Microsoft is the pre-eminent developer of software technology. Hitachi, by virtue of its long experience in integrated circuit technologies, is uniquely equipped to apply its skills to the success of the venture," Makimoto says. "The SH is Hitachi's flagship semiconductor product and has achieved considerable customer and market acceptance. The SH provides superior performance, particularly for 'personal access' products, which inherently have low-power requirements and high code efficiency."

The software story

None of these products are going to be much use in the long term, however, if there isn't much software support. But Microsoft claims that it also has this under control.

Late last month, it announced support for Windows CE from ACE Technologies, Agri-Logic, Ararat Software, bsquare development, GoldMine Software, Joey Technologies, LandWare, Nettech Systems, RW Information Technologies, SPYRUS and Xircom as companies that have announced their commitment to developing either software applications or hardware peripherals.

Meanwhile AT&T Wireless Services joined the list of companies committed to providing wireless messaging products and services for the platform.

The prospects for success

The great thing about the whole Windows CE scenario is that Microsoft is positioning these products as desktop companions, and therefore you don't have to choose whether you want your data on the desktop or the handheld, it will be synchronized on both.

The short-term problem will be a lack of software designed for the platform, although having pocket editions of Internet Explorer, Microsoft Word, Excel and an e-mail package should keep many people happy for a considerable time to come. And if there is any single software franchise that's good at quickly attracting developers, it has to be Microsoft and the various versions of Windows.

Will it be enough to attract those who have wavered in their decision to buy a handheld system in the past, or allow the chorus of Windows CE-compatible machines to make an appreciable dent in the market held by experienced players such as Psion? Only time will tell, but it is going to be a fascinating battle to watch. ❑

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Making cents of your money

TCP's annual review of personal financial software

BY ROD LAMIRAND

In our roundup of personal financial software this year, we found there have been a few changes in the market. Both Intuit and Microsoft have brought out new products. The competition to be your personal financial program of choice has continued unabated. The competitors are running full speed ahead with new features and good prices, but one has pulled ahead. As well, one of the packages from last year, Simply Money, has changed hands and dropped its price. The new owners have repackaged the program and are offering it on CD-ROM dirt cheap.

Our only truly Canadian entry, CanPlan 96 for Windows, is back with an upgrade to try to capture your dollars. The Internet is making its presence felt in these programs with links to financial Web sites. Online banking, while a reality in the United States, is still in the not-ready-for-prime-time category in most of Canada. Each developer is throwing in every possible feature and function to persuade you to buy their software.

A lot is riding on the software you buy. As the Internet and home PCs converge with personal banking, someone is going to broker your transactions with the world—and whoever that is could be on to something big.

Think of it this way: the banks are moving more and more to customer control and management of funds. At the same time, many individuals are tracking their finances on their home PC. Credit unions and banks are allowing transactions, such as bill paying, to be performed from the customer's home. Why not combine the two? Make a program like Quicken or Microsoft Money the front end for the financial institution.

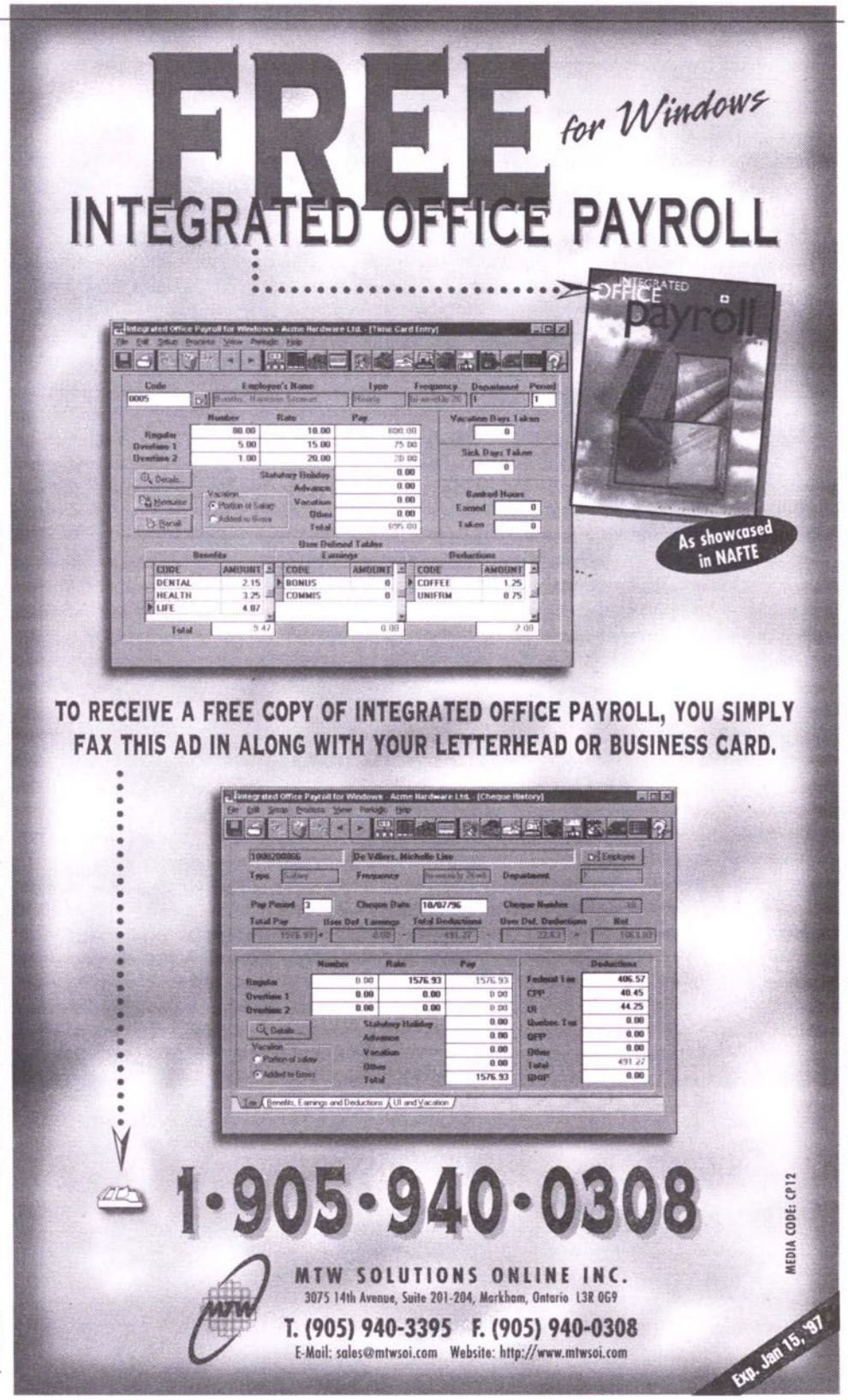
Wait! Even better, why not simply leave out the bank? If you can automatically, electronically deposit your pay cheque, pay bills and move funds on your home PC, and simply use a credit card, or debit card, to pay for items, why have a bank? Presto, the International Virtual E-bank! Perfect, sell the software, sell the credit card, collect interest, collect transaction fees, and best of all—no buildings.

Well, if you don't think Intuit and Microsoft and many others have thought of this, then think again. However, these things turn out in the long run, it is the consumer who is benefiting from this rivalry today. Financial software is mature and feature rich and the competition should see this continue.

This new crop of products is an incremental improvement only and in no way distinguishes itself with any real innovation, but today's financial software is some of the best and most useful software ever written. Read on to find out which program can best help you in making cents of your money.

Money 97

From: Microsoft Canada Inc.
Suggested Retail Price: $59.95
Microsoft Money 97 is a refurbishment of the beautiful Microsoft Money released in the fall of '95. Money is Microsoft's competition ➤



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for Intuit's Quicken. After the failed attempt to buy Intuit, Microsoft is left with only one way to proceed if it wants to own the home finances market. It must build a better program. In this instance, the anti-trust regulations in the United States are working. Intuit was so far ahead in both product features and user base that the sale of Quicken would have left one program dominating the market. As it is, Microsoft has worked very hard to take away Intuit's customers.

First, it built a program based on the same metaphor as Quicken. Then it made it one of the most full-featured and beautiful programs ever created for home consumption. Then it gave the software away for about four months in 1995. Now it has increased the feature set to include Internet sites, and a wizard that will automatically translate Quicken files into Money format, and it has lowered the cost so that the street price in Canada will be below $50 at some wholesale-style stores. Tough to beat.

Microsoft Money 97 is a CD-ROM-based Windows program for Win 95 or NT 4.0 (it does not work on NT 3.51). The minimum hardware for the program is any machine that has a CD-ROM and will run Windows 95, but on anything less than a 486-50, it drags. The basic features of the program are as one would expect with account ledgers, loan and mortgage amortizing, printing of cheques, portfolio manager, asset tracking, financial calendar with drag and drop and an extensive help system with text-based reference information to help answer many financial questions.

As a newer Microsoft program, it uses IntelliSense technology which is Microsoft's way of saying the program tries to guess what you are going to do based on what you have already done. Thus, things like autofill and other automated routines work to save you keystrokes. The basic components are good and primarily unchanged from the earlier release.

Money 97 now has a built-in Internet launch routine that takes you from the program to Web sites, as long as you have your Internet connection set up. This feature worked well for us. We liked this feature and the related feature—the Money Zone. The Money Zone is simply a Web site that the software will take you to. There, you will find information about stocks, financial articles, links to other sites and upgrade or patch information should Microsoft offer it.

There is a simplified online setup for electronic banking that works by entering the routing number from the bottom of your cheque. The software then tries to dial a number that will check to see if your institution offers online services. We couldn't get the number to work. Overall, this is a good value and a very good program. You can't really go wrong with Money 97.

Quicken Deluxe 6 for Windows

From: Intuit Inc. Canada
Suggested retail price: $69.95 (CD-ROM)

Quicken Deluxe is the most recent release of the most popular personal financial program in the world. There are more than seven million users worldwide. The company has set up a Canadian subsidiary that works hard to make the program fit the needs of Canadians. This is both surprising and not surprising.

It is surprising that Intuit has gone to the trouble of altering its program to suit the Canadian market as this market is about the same size as the state of California. It is good to see that the company is truly interested in meeting the needs of its customers and has taken the advice of *The Computer Paper's* 1994-95 recommendations by removing as much American content and features as possible. (Now if only they could get the spelling of cheque right.)

On the other hand, is not surprising that they are working so hard. Intuit built itself on an easy, intuitive (hence the name) interface and the practice of leading the market with features. In fact, many autofill features found today in everything from PIMs (personal information managers) to spreadsheets, were pioneered by Intuit in early releases of Quicken. Continuing that tradition, Intuit leads the Internet with one of the best financial Web sites, the Quicken Financial Network.

Quicken is based on the metaphor of a chequebook. This is a visually appealing program with extensive functionality. Basic features are as would be expected and similar to those listed above for Microsoft Money. As well, there is a Debt Reduction Planner, Show Me videos, Internet access, Home Inventory and Ask a Professional. The CD-ROM-based Quicken Deluxe is written for Windows or Macintosh and comes with Bell Charts Mutual Funds Finder, which provides in-depth information for more than 1,300 Canadian mutual funds. The program is well integrated with Intuit's very extensive Web site and has one-year limited access to stock quotes from the VSE, TSE, ME.

There is insufficient space to detail the numerous improvements, but the software is rich in features. Intuit claims that it has 65 percent of the Canadian personal financial market—that may, or may not, be so. If it isn't, it soon will be if this release is any indication of future versions. Quicken Deluxe is hands down the best program in this survey.

CanPlan Personal Edition for Windows

From: Springbank Publishing Co.
Suggested retail price: $50

Reviewed here last year as the little program that roared, CanPlan 96 Personal Edition for Windows has gone though a few improvements and the company has managed to make the program a good value. Now delivered on three floppy diskettes, this Windows 3.x/95 program is a quirky, little Canadian treasure. The interface is getting better but it is still an ugly little beast. The conventions usually followed by more mature programs are missing. For example, your social insurance number can be 123 456 789 but not 123-456-789. And there are no automatic anythings, but as was the case last year, the program will give you a very sharp and accurate look at your finances.

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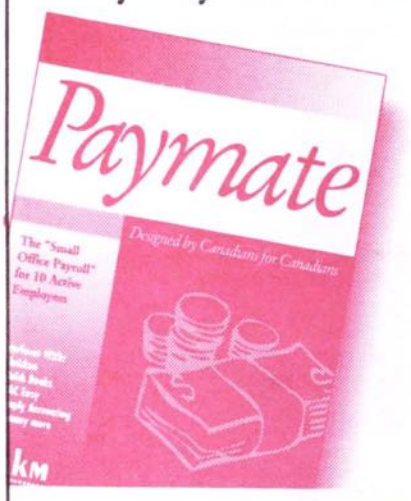

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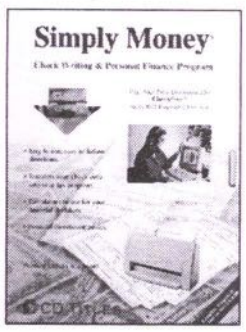
Simply Money

From: CD Titles
Suggested retail price: under $20



From the category of recycle, reduce, reuse comes the second life of Simply Money. Simply Money was reviewed here last year as a $70 program from Computer Associates. The review found the program unique, simple and under-powered. Now owned by CD Titles, the program has found a new life as an inexpensive little CD-ROM.

Deaver Brown, president of CD Titles, says he is trying to make "the Simply Money cheque-writing and personal finance program as easy and cheap to use as a solar calculator at $10 to $15."

The Simply Money interface is a wonder of simplicity. Lying on a felt tabletop are icons divided into Income, Payee and Accounts categories. Along the bottom of the table are icons representing actions. To enter a payment, or a deposit, the user simply grabs the appropriate icon and drops it on top of the correct icon. The intuitive object-oriented style of Simply Money is extremely easy. "If you want a complex program, buy Quicken. If you want a simple, cheap, easy cheque-writing and tax-import product, buy Simply Money," says Brown.

He is right.

Every one a winner

As you can see, there really are no losers here this year. For a simple program that is no strain on your wallet, Simply Money can't be beat. For a truly Canadian financial health program, CanPlan is your product. Great value for a very good program can be found in Microsoft offering, Money 97. And, last but not least, Intuit has once again produced the best financial program ever created with its Quicken Deluxe CD. If we could recommend one thing to these developers, we would say make the online banking in Canada easier and more reliable. If we could recommend one thing to users out there, we would say give this type of software a try. It is full featured, mature and easier than ever to help you make cents of your money. ❑

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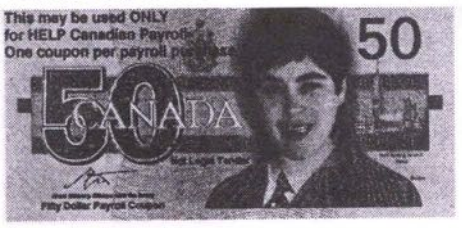

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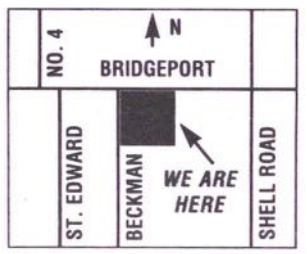

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Getting organized

A roundup of personal information management software

BY ROD LAMIRAND

PIMs, or personal information managers, have matured in recent years to a point where they offer both the standalone and networked user considerable value. All the major PIM makers are offering new products that have been rewritten since the release of Windows 95 and take advantage of that fact.

Lotus is really moving forward with Organizer 97 and has big plans to become the de facto standard for corporate and personal organizers. Meanwhile, Microsoft is moving forward with big plans of its own that see its new offering populating the land, as ubiquitous as Microsoft Office.

All the organizers have a number of improvements, many of which are common to the group as a whole. They all have the basic components: an address book, a calendar, and a to-do list, but they all also offer increased ease and greater ability to transfer between different data types.

Most have tried, in one way or another, to include e-mail and Web page addresses. Most have decided to use Windows 95's built-in TAPI (telephone application programming interface) for telephone dialing and time tracking. Common in these new programs is the ability to select a contact and have the program place the contact's information in the header of a letter, saving you the bother of entering name and company data that is already in your PIM. Most programs will also print output for three or four different brands of paper-based organizers.

Another development is the push by various developers for a common data exchange type to ease the sharing of different databases between products and on the Internet. This new agreement could do away with the dreaded process of converting data to a comma delimited text file before importing it to a new database, which would be a relief.

Lastly, the market is moving toward a new protocol whereby electronic business cards are easily passed between individuals via e-mail or any other medium.

Evaluating PIMs can be a tough job because different people prefer various styles and features and have different skills. However, here are a few criteria to consider:

- **Ease of use:** Is the interface easy to learn? Is the online help, helpful?
- **Features:** Will the PIM do all that you want it to, now and in the future? Can the PIM automatically dial calls? Does the product provide caller tracking so that you can keep track of conversations?
- **Internet features:** Does the PIM allow you to record Web site and e-mail information? Does the PIM launch popular browser applications? Does the PIM work with popular e-mail packages?
- **Search and sort functions:** Is it able to search by entry type, priority, category, etc.? Can it search by word across any and all fields?
- **Workgroup/network features:** You may be a single user currently, but perhaps you'll be in a networked environment in the future. Does the PIM allow for group scheduling, selective sharing of data, notes?
- **Printing:** Many PIM users also use paper-based systems, making good printing capabilities essential for integrating the two. Will it print pages that fit your paper organizer system? Will it look the way you want: report formatting, font options, preview, double-sided printing, color? These are some things to consider.

These programs are full of ease-of-use conventions, productivity enhancements, automated shortcut routines and every other nifty little trick their makers could think up. They are better looking, smarter, and more cooperative than their forefathers. But for all the spit, polish and promise there is one elemental factor that might give you pause to consider: is a PIM for you? To be more succinct, will the value of organizing your information exceed the time cost?

The short answer is Yes! One of the problems with personal software, whether it is an information manager or a financial program, is that well-intentioned consumers purchase the software and then feel defeated when they don't keep perfect records. This is unnecessary. The programs reviewed below have so much functionality that there is something for every user. If you only use the address book or the journal, that is fine. The more fastidious can utilize every feature, the lackadaisical may enter only a first name and phone number. You may not really need your drycleaner's postal code.

PIMs have made great strides and come full of great little features. The market is crowded and that is good for consumers. Each company is vying for shelf space, which makes products richer and the prices leaner. Look for this trend to continue as Microsoft ups the ante with its new all-in-one e-mail/PIM/fax program, Outlook, and the new features in Lotus Organizer, which push the PIM envelope. Find below reviews of Any Time Deluxe from Individual Software, Day-Timer Organizer 2.1 from Day-Timer Technologies, the makers of Day-Timer paper-based organizers, SideKick 95 from Starfish Software, Lotus Organizer 97, and a short peek at how Microsoft has overhauled their PIM, Schedule+.

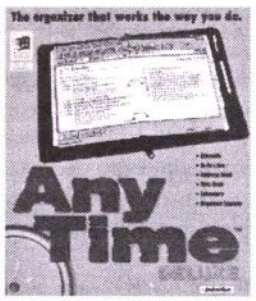
Any Time Deluxe

From: Individual Software Inc.
Suggested retail price: $49.95

Any Time Deluxe is a Windows 3.x or 95 program for standalone use or use in a small network. The product can be licensed in a network pack of three, five or 10. Both a CD-ROM and diskettes are included in the package.

As with most of the products here, Any

Time uses the notebook organizer metaphor and will print to a number of desktop organizers as well as an infinite number of customizable calendar styles. The program is easy to use and fairly intuitive.



The features are good but not extensive. One feature I really liked was the Drag Net. Drag Net is an icon at the top of the calendar views that sits waiting for you to drop something on it. The information is then stored there while you leaf through the weeks or months to find the day or note pad that you want to place the data on. Now just grab the Drag Net icon and drop the information wherever you please. In essence, this is the same as highlighting and copying, selecting and pasting; however, it is a good example of the kind of natural ease-of-use feature of the program.

Any Time Deluxe has a long list of features; however, in the big picture they are the expected rather than the innovative. This is a good program with a pleasant interface. Because of its excellent pricing, it is a good value. I recommend it for new users but not for experienced workers with high expectations, and it is not a good choice for businesses.

Day-Timer Organizer 2.1

From: Day-Timer Technologies
Suggested Retail Price: $59.95

Day-Timer Organizer is a powerful, flexible, easy-to-use PIM that is tightly integrated with the company's desktop, paper-based organizers. (The company sent along a binder for evaluation.) Day-Timer Technologies Inc. introduced its product in 1994, and it is one of the bestselling PIMs on the market. The program is available for Windows and Macintosh, and manages schedules, to-do lists, addresses, phone calls, notes, and expenses.

This new version has Web and e-mail launchers, customizable fields, full text-search, linked phone log, expense tracking, entry linking, and free-form notes. A selection of binders and computer forms designed to work with Day-Timer Organizer is available to create a complete time-management system.

This is a very good program that I really liked. The developers have incorporated changes to reflect the growing use of the Internet. Day-Timer automatically launches a user's browser (Netscape Navigator or Microsoft Explorer) to go to any Web site recorded in a contact record or notes field. Similarly, for any e-mail address entered, Day-Timer will launch an e-mail package (any VIM or MAPI system on Windows; Claris e-mailer or Eudora on Macintosh) and pre-address a message.

One of the best features is the quick fill data entry. Originally brought to the consumer market by Intuit in the Quicken software, quick fill lets the software guess what you are going to type based on previous entries. It works quite well and is a real bonus here. The company has 50 years of time-management experience with paper-based systems and it shows. Day-Timer claims 85 percent of those who use PIMs in their daily lives also carry paper-based planners. I am not sure if this is true, however, I am sure that the combined use of the program and their notebook organizers is a real joy.

In some programs, the complexity of printing the information to a two-sided, odd sized sheet is confusing, but the document-management wizard in Day-Timer makes setup straightforward. The leather-covered day book was a real joy to work with.

The product can also be purchased as Day-Timer Organizer for Workgroups which is a strong group-enabled scheduler/PIM. The software can be purchased in multi-user packs, which may be combined to support up to 720 users per database.

SideKick 95

From: StarFish Software
Suggested retail price: $49.95

SideKick 95 is much like some of the other PIMs reviewed here except that the metaphor for the program is a desktop rather than a paper-based organizer. The look and feel of the program is very nice.

Visually, there are a number of pleasant details—for example, each month the calendar displays a small unobtrusive banner that nicely evokes the feeling of the season. As well, the default color schemes are aesthetically pleasing as well as perfect for distinguishing various types of information. Daily, weekly, and monthly views are available as with most PIMs. There is also the ability to drag and drop some items from one area to another, although this feature is not as universal as in other programs.

SideKick 95 was one of the few programs that imported Microsoft card files and Schedule+ files perfectly. Also nice, SideKick has a world view that not only lists various, definable time clocks but also shows which area of the surface of the globe is currently in sunlight. This little feature is a nifty way to see whether the rest of the planet is about to get up or go to bed.

As one would expect, the program has a phone dialer, recurring events, support for Microsoft Exchange, password protection and a slew of other features. Unfortunately, the overall effect falls a little short. It is not possible to drag and drop appointments in the monthly view. The program places icons all over the desktop, which seems unnecessary.

This is a program that is pretty and easy to get up and running, but the depth of features and the ease of navigation are not there as they are for the other programs. As an introduction to the PIM world, or for a casual user, this is a fun little program.

Lotus Organizer 97 for Windows 95/NT

From: Lotus Development Corp.
Suggested Retail Price: $99.95

Just released a few months before Christmas, Lotus Organizer 97 is a full-fledged information manager but it is also a lot more. From the standpoint of a standalone application, it is a very complete and robust program that will work very well by itself or as part of Lotus SmartSuite. Considering the space limitations here, let me dispense with listing the ➤

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program's features. The basic components that are found in most of these programs are also found here.

The features that set the program above the rest are as follows:

- The **great linking ability:** As an OLE 2.0, 32-bit program for either Win 3.x or NT, it is possible to do almost all your work from inside of the PIM.
- **True drag and drop:** Things that you would expect to be drag and drop all are. The interface is good and the navigation tools are excellent.
- **Other Organizer 97 features include:** A new daily calendar view with appointments displayed as blocks of time in a graphical format, rollover of planned calls until completed, and rich text formatting. There are other interesting functions such as launching your Internet browser or e-mail program, but there are two very exciting things that really presage the future of PIMs: a common front end for both personal and corporate PIMs, and Web Calendar, on-the-road Internet access to your PIM data.

Organizer is one of the most popular PIMs on the market and well regarded as a personal productivity product. Lotus Notes is the number one corporate communications program and now Lotus intends Organizer to be the front end for Notes. This will be good news to both Notes and Organizer users and a serious threat to Microsoft's plans to dominate the corporate LANs of the world. Equally compelling is the new Web Calendar. Organizer 97 Web Calendar, a Web server application that enables Organizer 97 files to be accessed through industry leading Web browsers, is available as a free download from Lotus' Web site (see contact).

Organizer 97 Web Calendar will allow Organizer 97 users to access, share and manage schedules and tasks remotely over the Internet or on corporate intranets. "Organizer 97 Web Calendar extends the power of the Organizer 97 PIM, allowing users to remotely access their calendars as well as share their schedules with co-workers, clients and suppliers via the Web or corporate intranets," says Nina McIntyre, general manager, Lotus Organizer.

Organizer 97 Web Calendar is a common gateway interface (CGI) application that is installed onto a Web server. Once installed, end users can save their Organizer 97 (.0R3) files onto a network file server or a Web server. Using Netscape Navigator 3.0 or Microsoft Internet Explorer 3.0, end users can then connect to a home page and access their Organizer information by specifying a file name and entering their user-defined password. Organizer 97 Web Calendar then reads and displays the information stored in the Organizer file as a standard Web page. Users also have the ability to post Organizer files that can be accessed and shared by multiple users. Organizer 97 is a great choice, whether for personal or business use.

Schedule+

From: Microsoft Canada Inc.
Suggested retail price: Part of Microsoft Office 95

The original Schedule+ is a puny little PIM that I have used since it hit the market at the release of Windows 95. It is a plain Jane, vanilla program that is functionally prosaic

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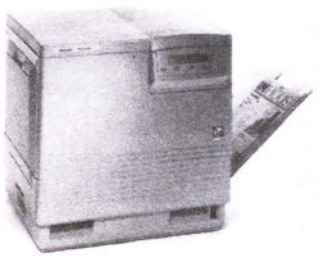

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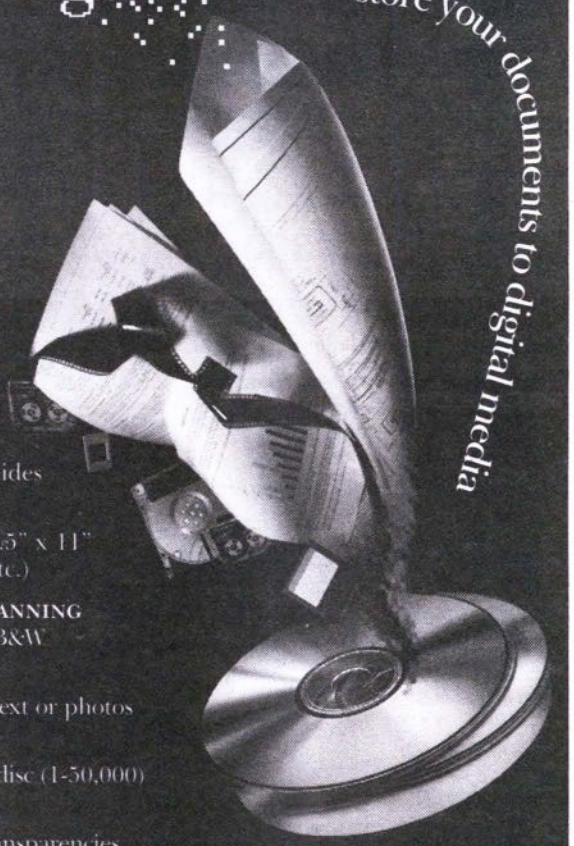

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and visually dull. Microsoft has replaced it. But they have done more than build a new PIM, they have re-invented the PIM and combined it with their communications program Microsoft Exchange. At the time of writing, I do not have a copy of the product and therefore there is no review. However, having seen a detailed demonstration of the product, I will mention a few of its features and comment on some of the developments in this area.

Microsoft's new information/communication program is called Outlook and it will be released in conjunction with Microsoft Office 97 or as a standalone application—it should be available as you read this. The demo was impressive. By combining your e-mail, fax, Internet browsing and letter writing with your addresses, phone numbers, calendar appointments and to-do list, Microsoft has created a one-stop work centre for the organization and tracking of all communications.

The program is very object-oriented and will allow for dragging almost any data onto any other. There are neat little enhancements such as the ability to schedule a meeting for "The day after tomorrow," "Two weeks from today" or even "Three weeks before Christmas" and the software will enter the correct date. I'm not kidding, type in "meet Bob S. for lunch tomorrow," and the luncheon is entered in your calendar!

Another development is the move toward the Internet Explorer-style interface. The new Office applications have a cleaner toolbar look that is consistent with the toolbars in Internet Explorer 3 and the beta of 4. There are a number of other new features that take advantage of Microsoft's knowledge of its own operating system, but you will have to wait for another issue for a full evaluation.

Of interest is the degree to which the Internet is built into the product. Microsoft clearly expects both private, and business, users to have a continuous online connection.

Along these same lines is the Microsoft business card protocol. With the new electronic business card, updating and maintaining a database of contacts could be immeasurably easier. As mentioned above the problem lies with finding an industry-wide, open format for these cards. On the one hand is a specification announced by Versit, a subsidiary of IBM, and Siemens, as well as Lucent Technologies, with the support of some 50 companies, including: Novell, Lotus, AT&T, Oracle, HP, IrDA and Netscape, to name a few. On the other hand, Microsoft, which practically owns the business-suite market. Either way, PIMs and contact managers are moving toward standardized data formats and that in itself will be good news for the public.

And the winners are...

It is difficult to pick a winner from these products because they are all so good, but if this reviewer had to give a recommendation it would have to be for Lotus Organizer 97 as the best all-round product, followed closely by Day-Timer Deluxe as a single user product. ❑

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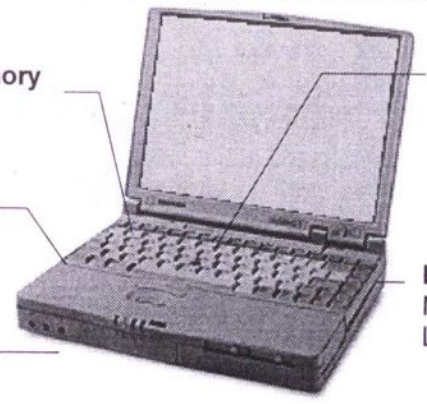

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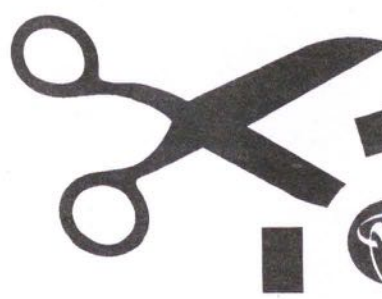

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Pilot device now works with Macs

BY PATRICK MCKENNA

MOUNTAIN VIEW, Calif. (NB)—After debuting Pilot, a new handheld computing device at Demo '96 in January, US Robotics witnessed a successful product launch of a Windows version of the unit.

And now, with a Macintosh Connectivity Pack, users can have the same device exchange information with Macintosh computers.

Pilot ships with a suite of personal information management (PIM) software including a date book, address book, to-do list, calculator, and note-taking applications. Companion desktop PIM, connectivity software, and a desktop cradle are also included for a total price of US$249.

A spokesperson for US Robotics said, "We have been looking forward to opening the Pilot market to the Macintosh community. The success of the Windows side has drawn a lot of interest from Mac users, and now we can offer them the same features."

Asked if entry into the Macintosh market would be hampered by Apple's Message Pad, commonly referred to as the Newton, the spokesperson commented, "These are two very different products and we think they appeal to different users. Our unit is much smaller in size and in a different price range."

Pilot is also different in size and less expensive than the newly introduced Windows CE handheld personal computers (HPCs) which debuted at the recent Fall Comdex.

HPCs sell for approximately US$500 and options for some models can increase the price considerably.

The US Robotics unit is based on the Palm Operating System (Palm OS), a handheld computer operating system platform featuring low power, small form-factor devices to integrate seamlessly with desktop personal computers.

The new Macintosh connectivity pack, which includes desktop software and a serial port connector, retails for US$14.95, and is available immediately. ❑

Contact: US Robotics, Tel: 1-800-891-6342.
Web site: http://www.usrobotics.com/palm/

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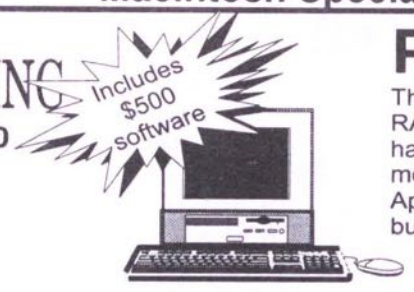

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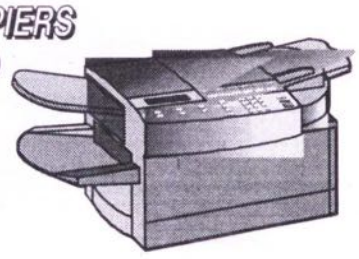

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ON YOUR OWN
by *Douglas* **Gray**

Tips to save money with an RRSP

The annual RRSP season frenzy is upon us. By now, you have probably been bombarded by the advertising campaigns offering mutual funds and GIC's for your RRSP. It can be very confusing to decide what options are the right ones for you. However, one fact is certain. If you are self-employed, it is particularly imperative that you plan to look after yourself in retirement by maximizing your RRSP "contribution room" every year. Not only will that cause your RRSP to build quickly, but it will give you the tax deduction write-off against your other taxable income in that year, thereby reducing your tax burden.

Otherwise, you only have the Old Age Security (OAS), which is being revamped and clicks in at age 65, and the Canada Pension Plan (CPP) income that you might have earned by being an employee of your own company. You can start taking out a CPP pension at age 60 under certain circumstances. Whether you are counting on one or both forms of pension for retirement income, it will probably not be enough to maintain the lifestyle and quality of life that you would need or want.

In last month's column, I mentioned how to negotiate .5 percent more for a GIC than the financial institution's posted/published rate of interest. Your own financial and investment plan, needs and risk tolerance will dictate what investments you buy for your RRSP. In view of the current low interest returns on GIC's and other fixed income funds, many people consider buying some form of mutual funds as part of their investment portfolio. If you do decide to buy mutual funds, here are some tips on how to save money by knowing the areas where you can attempt to negotiate a better deal.

Switch fees

When you move your investment from one fund to another, there is often a switch fee charged of up to two percent. For example, if you were transferring $10,000 from a bond to an equity fund, the fee would be $200. However, if you are dealing with a mutual fund company with a family of funds (e.g. some fund companies have over two dozen funds), than you want to have the switch fee waived for any transfers within the fund company. However, this is discretionary, so if you don't negotiate you won't save, and therefore make, the extra money.

Front-end Load Fee

This is the sales fee imposed at the time the mutual fund shares are purchased. It is called an acquisition fee or front-end load charge. Fees could range from one to eight percent (although one to five percent is the average range) and are a negotiable charge. It depends on the amount invested, the nature of the investment and other variables. You want to discuss this openly with the person involved and do your comparative research to determine your investment fee comfort zone. Naturally, the adviser wants to have some incentive and be motivated. However, every percentage point that you pay is effectively reducing your future return on investment, so negotiate assertively to pay the least possible. Ask what is the least commission that they would charge to get or keep your business.

Rear-end load fee

Another way sales commissions are paid is to charge a redemption fee or rear-end loading charge. This is paid at the time that the money is withdrawn from the fund. Redemption fees could be based on a fixed amount per transaction (eg. $15 to $30) or a percentage of either the amount of the initial investment or the current market value (net asset value) of your investment—it's frequently the latter. This amount could range from 4.5 percent to 10 percent in the first year, with a sliding scale diminishing to no fee if the funds are kept in for a period that could range from five to 10 years, depending on the fund company and individual fund. Also, many funds permit you to take out up to 10 percent of the fund value each year, without penalty. You want to check on all the above matters prior to purchasing the fund. These fees and charges should be in the prospectus. The reality, however, is that most people don't read the prospectus thoroughly, let alone understand it, so ask. Some redemption fees are negotiable and some are not, because they are locked in by contract in the prospectus.

Whatever decision you make, it is prudent to seek the advice of a professional financial planner and tax accountant. ❑

Douglas Gray, LL.B. is a Vancouver-based speaker, lawyer, columnist and author of 15 business books plus a real estate investment software program.

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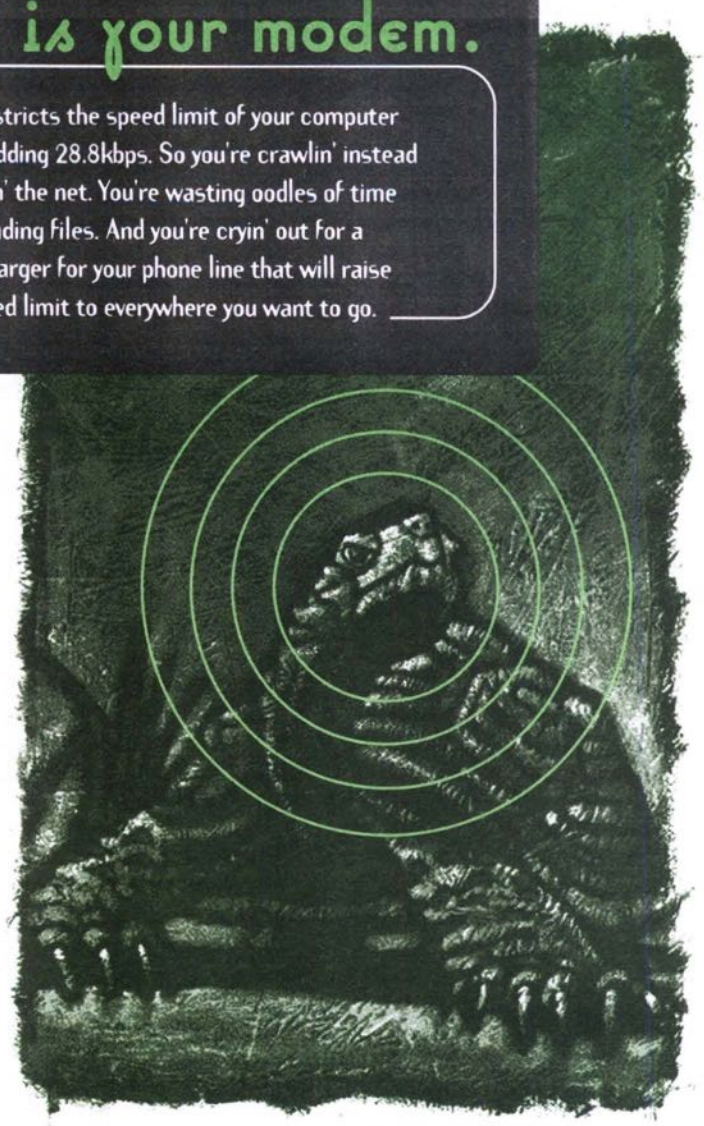

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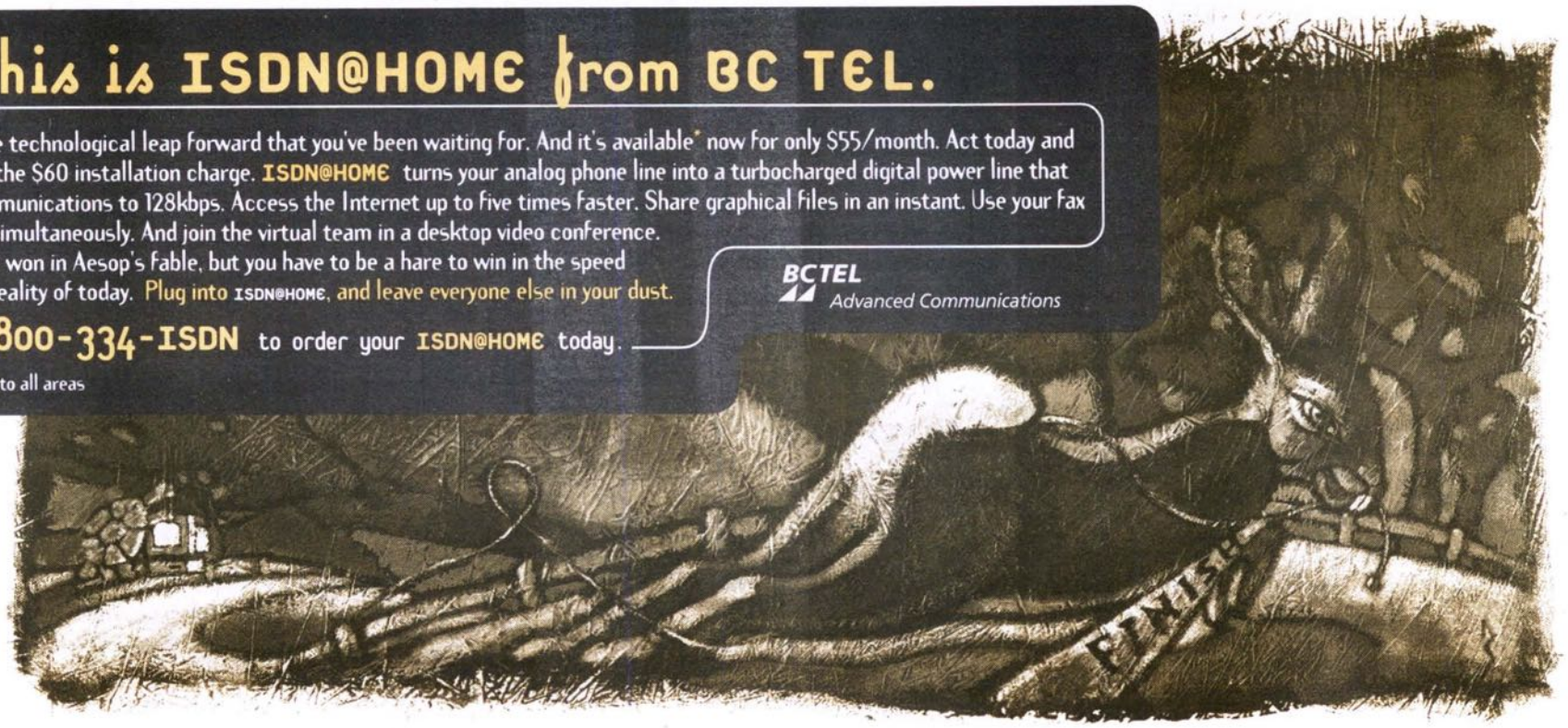

Cyber romance breaks no new ground

BY KEITH SCHENGILI-ROBERTS

Chat: A Cybernovel
Author: Nan McCarthy
Publisher: Peachpit Press
Price: $11
ISBN: 0-201-88668-5
Softcover, 123 pages, 1996

Ever wonder what it is like to meet somebody online? How much can you really learn about somebody through e-mail? How much would you tell someone you've never met about your innermost desires? This is the premise of *Chat: A Cybernovel*, which details the fictional e-mail correspondence between a young couple who meet online.

This slim little book is Peachpit Press's first venture in publishing fiction—it is better known for publishing computer books. Author Nan McCarthy is better known as a writer/editor of technical books on computers, like *The Macintosh Design Handbook* series and *Camera Ready with QuarkXPress*. This is her first work of fiction.

Chat is the story of two people who "meet" while logged onto an online information service. The two characters in the book are Bev, a tough-minded book editor who has been online for several years, and Maximilian, a flamboyant and restless copywriter. They strike up a conversation and cautiously begin corresponding, and their relationship gradually becomes more intense. The story is told as a series of e-mail messages they send each other.

The book is pure voyeurism as you watch how their relationship blossoms entirely through electronic means. But however good the gimmick, this book really does not stretch the boundaries of fiction-writing much. Given the often convoluted factors that can play in an online relationship, like unknown sexual identities or cyber mind-games, the author keeps things pretty simple and does not deeply explore the fictional possibilities of an e-mail romance.

The e-mail gimmick is interesting, and the format compelling, but the story is pretty straightforward. Bev is the only character to have any real depth, and Maximilian comes off as somewhat sleazy almost from the start. Any experienced reader will see the abrupt conclusion from a mile off. The book commits the ultimate romantic-writer's sin by ending just as things begin to get interesting. It is also a fast read—this reviewer read the whole book in just over half-an-hour. ❑

Contact: Addison-Wesley, Tel: 416-447-5101.
Web site: http://www.peachpit.com/

TOP 10 COMPUTER BOOKS

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2 OFFICIAL Netscape Navigator Gold/PC
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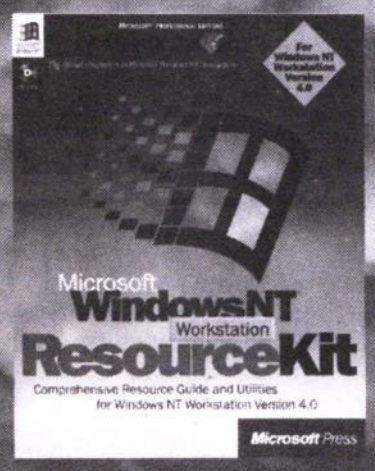

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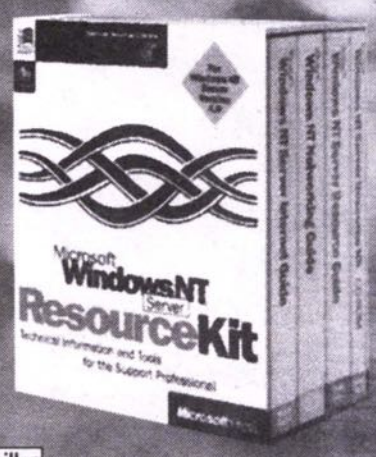

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Color me Comdex®

Past, present and future on display at Vegas tradeshow

BY JEFF EVANS AND DAVID TANAKA

COM•dex: *n.* an event that is huge and overwhelming yet mysteriously alluring; *v.* to be overwhelmed with an unmediated flow of fact, confabulation, pontification and hyperbole that operates on all senses, as in *"I'm all comdexed out."*

Whew. Well, that's Fall Comdex for another year. Many people who go to the biggest Comdex of them all in Las Vegas complain about the crowds, the endless lineups, traffic congestion and the obscenity of excess shown by the exhibitors in their quarter-million dollar pavilions and extravagant hospitality suites.

All that may be true, but if you want to get a idea of the shape of the things to come in the computer industry, this is the show to attend. As one might expect, the underlying technology that touched much of what went on at Fall Comdex was the Internet and Internet-related tools. With more than 2,000 exhibitors in attendance, it's difficult to provide a comprehensive report on all that was new. What follows are the items that caught our attention during the four days we trolled the show floor and conference halls.

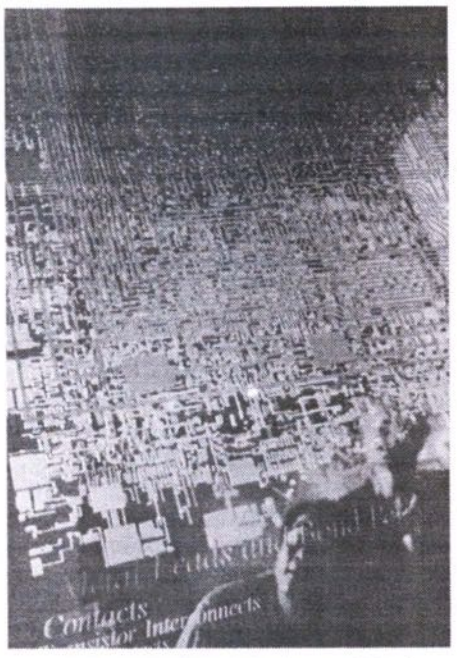
Keynote: You ain't seen nothing yet, according to Intel's Grove

In his keynote speech, Andrew Grove sketched a picture of the future of computer processing technology in which he promised that what will happen in the next 15 years will dwarf the improvements in performance in the previous quarter century.

"The revolution, started 25 years ago with a small sliver of silicon known as the microprocessor, has had a phenomenal impact on changing the way people work, communicate and obtain information. I believe that we are only at the beginning of this revolution in progress, and the best in personal computing is yet to come," he stated.

Groves went on to note that the first Intel microprocessor, the Intel 4004, had 2,300 transistors when introduced in 1971, and could process 60,000 instructions per second. The current Pentium Pro chip has 3.5 million, and can perform up to 400 million instructions per second (400 MIPS). Grove claimed that by 2011, a microprocessor with a billion transistors may exist, with the ability to process 100,000,000,000 instructions per second (100,000 MIPS). This would be 250 times faster than the fastest current Pentium Pro.

Groves claimed that imminent improvements in the microprocessor will allow PCs "to deliver lifelike, real-world experiences."



Designers peer through the layers of Intel's first mircroprocessor, the 4004.

Even old sells: computer museum display

As part of the celebrations of the 25th anniversary of the microprocessor, a temporary museum was erected in the parking lot next to the Las Vegas Convention Centre. In it were more than 40 historic examples of computer technology.

The museum presented its display in the form of "The Hacker's Garage," a cluttered tribute to the fledgling computer culture of the '70s that encouraged individuals and small companies to invent the technology that changed the world. Examples of pivotal inventions included Computer Space, the first coin-operated video game, created by Nolan Bushnell in 1971, the MITS Altair 8800, perhaps the first, "do-it-yourself" personal computer, and the Apple 1, the first 200 of which were literally sold out of a garage by Steve Jobs and Steve Wozniak.

If it were not for some last minute "rescue archaeology" by devoted computer professionals, much of the physical record of computing would have been lost in the frantic rush to promote the "next big thing." In some cases, the last-known examples of key computer models were literally rescued from garbage dumps, and delivered to Boston's Computer Museum, whose willingness to loan key artifacts helped make the Comdex Museum possible. It's astonishing to consider how quickly the state-of-the-art technology of only a few years ago, dazzling and incredibly expensive in its day, has come to look prehistoric.

Contact: Museum at Comdex,
via Intel's Web site: www.intel.com.

Microsoft launches Windows CE handheld computer platform

The LGce is one of the many new handheld computers employing Windows CE.

At a splashy launch on Nov. 18 at the Cirque du Soleil theatre in the Caesar's Palace casino, Microsoft's chief executive officer and one of the world's richest men, Bill Gates, launched the much awaited Microsoft CE operating system (OS).

Taking advantage of the presence of much of the world's computer press at Fall Comdex, Gates outlined to a packed hall the strategy behind Windows CE. He claimed that the traditional market for handheld computing devices (such as the Hewlett-Packard OmniGo, the Psion, and the Apple Newton Message Pad) had been limited by the relatively low functionality, difficult connectivity and limited applications compatibility of these devices, which made them less appealing to both enterprises and individual PC users. Gates believes that the Windows CE solution, which is to make handhelds easy to integrate into the Windows computing environment, will help create a much larger installed base of handheld computing devices.

Continued on page **92**

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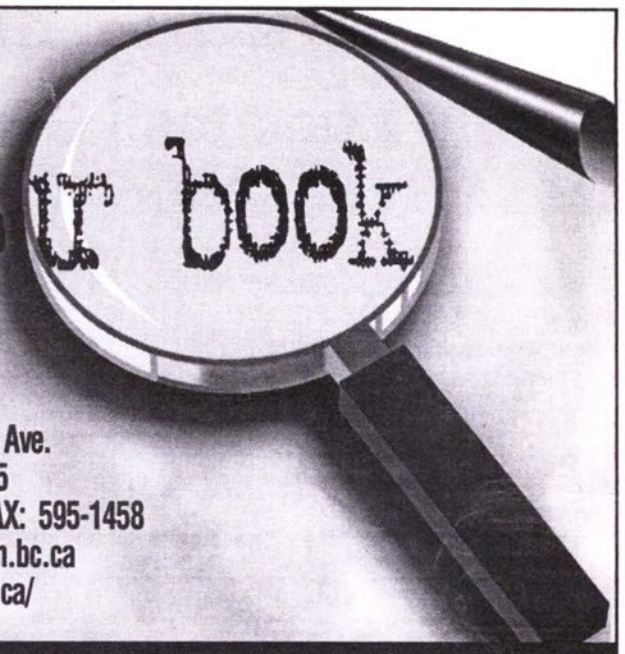

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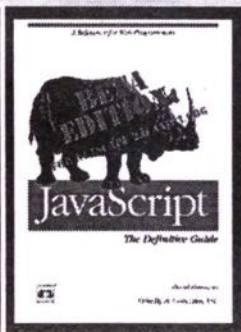

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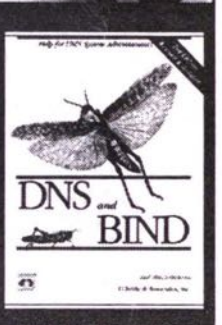

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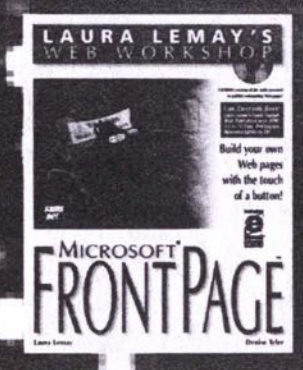

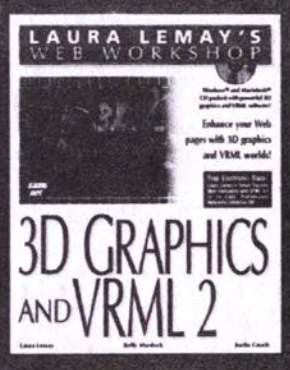

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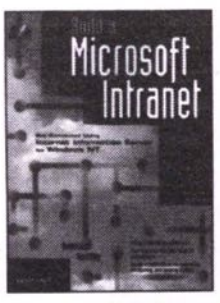

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Color me Comdex

Continued from page **90**

Gates admitted some shortcomings in this first generation of CE devices. Future improvements will include such innovations as higher resolution, color screens, voice input, faster processors and more RAM. However, for now, the Windows CE is a very impressive step towards making handheld computing a seamless extension of mainstream PC technology, a first step towards truly pervasive, high-performance mobile computing.

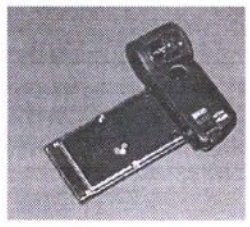
In a separate interview, John McGill, Microsoft's man in charge of the Windows CE project told us that the handheld PC is aimed at a group of users called the locally mobile user. Mobile professional was originally defined by research firm BIS Strategic Decisions as people who are away from their desk more than 20 percent of the time.

"Being away from their desk more than 20 percent of the time then breaks down into different kinds of mobility patterns," said McGill. "The top three percent are what I refer to jokingly as the plane-hopping globe-trotting kind of executive image you have when you hear mobile professional. But in reality, the bulk of the people who are mobile professionals are more like you and me. We leave our desks for greater than 20 percent of the time, but often we're within the confines of our own corporate environment or certainly in the Metro area. Given that, we're considered locally mobile. That means we have a greater opportunity to come back and synchronize at our desk. And that who this product is really very very focused on."

(See a separate review of the Cassiopeia, which uses Windows CE, elsewhere in this issue.—Ed)

Contact: Microsoft,
Web site: http://www.microsoft.com

Color Zaurus—maybe by mid-year



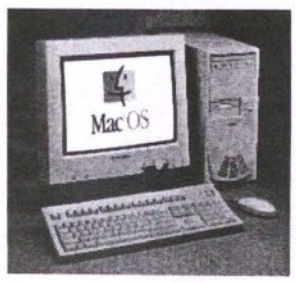
The PC Card-based CCD lens transforms the Zaurus into a digital camera.

One of the interesting maybe technologies (available now in Japan and maybe here by mid-97) is Sharp's Color Zaurus, which is quite unlike the Zaurus models we're familiar with in Canada. This one has no keyboard, although the Sharp representative wasn't sure if that would be an option for the North American market. It also uses a proprietary operating system, which again, may be replaced for the North American market.

One of the more interesting devices for the color Zaurus was a PC Card-based CCD lens, which plugs into the Zaurus' PC Card slot and turns it into a digital camera. During the demonstration, the Sharp representative took a picture, pasted the image into an e-mail message, and then fired the message across the local area network (LAN) Sharp had set up to a portable computer a few inches away.

Continued on page **95**

MOTOROLA



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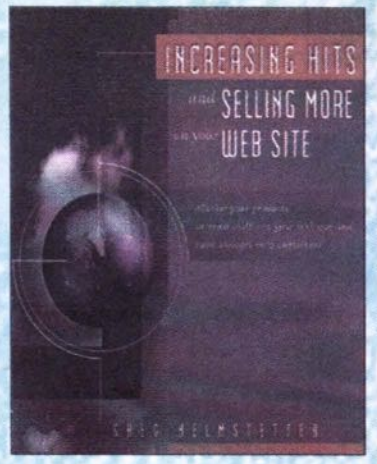

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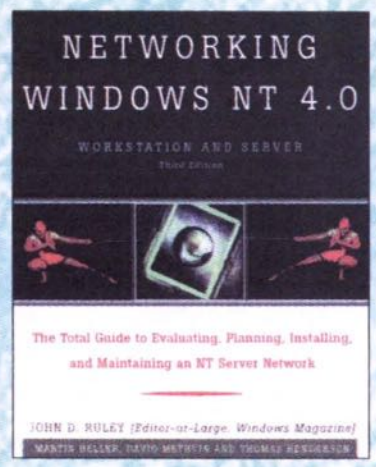
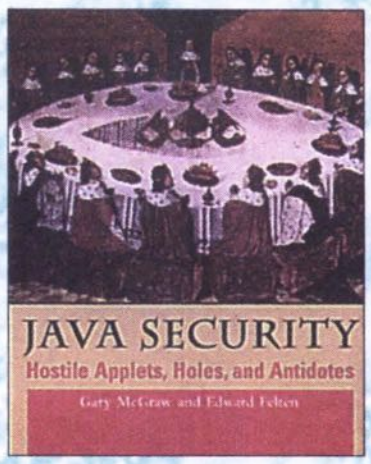
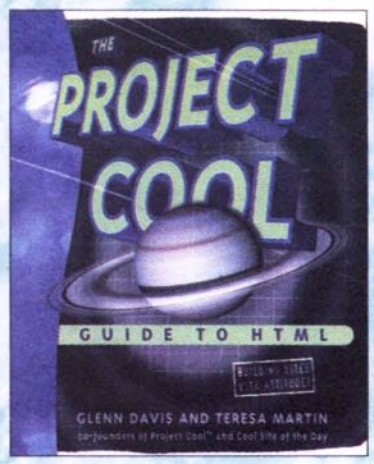


Here is the third edition of the book regarded as the single best resource for network managers on both of the workstation and server versions of Windows NT. It tells you absolutely everything you need to know to plan, build, manage, troubleshoot, expand, and develop NT-based corporate networks with Windows NT 4.0.



Ed Felten was one of the first who blew the whistle on the security weaknesses of Java. Here he joins Gary McGraw in outlining secure programming practices for today's hottest language. They reveal the weaknesses and pitfalls of current safe Java policy and show how to incorporate both organizational and technical fixes into an effective safety management program.



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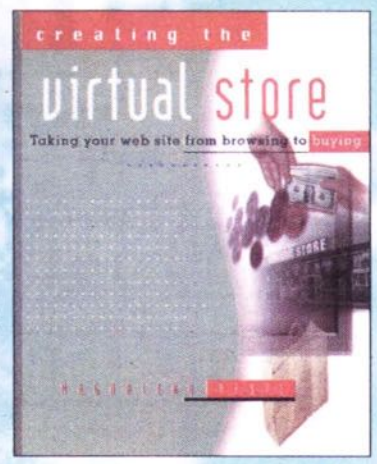

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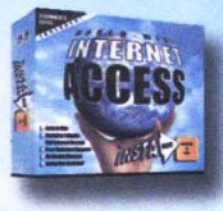

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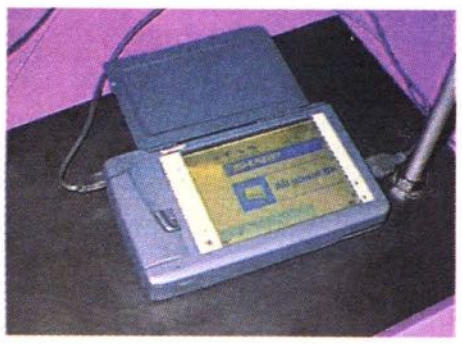

Sharp's Color Zaurus

The unit is about the size of a Newton, with a built-in Web browser and mail package, a typical PIM suite, and weighing in at about 450 g (1 lb.). Its estimated price is $1,500.

Apple focuses on Internet, openness and innovation

Apple Computer rolled out its latest technology, and declared that the company's previous practice of ignoring technology not developed in-house (the notorious NIH or "not invented here" syndrome) was officially dead. From now on, Apple representatives announced, Apple wouldn't hesitate to include the best of the world's technology in its hardware and software products.

On the subject of the timetable for the release of Mac OS 8, codenamed Copland, Apple was more coy. Apparently, Apple is still considering a wide range of options regarding its much-delayed new version of the OS: an incremental, partial release of Copland, the

The Newton MessagePad 200 with detachable keyboard

incorporation of some third-party software, or a longer delay. An announcement of a final decision of what to do with OS 8 was promised for the next MacWorld show in early 1997.

Some of the new Apple products on display included the very impressive new MessagePad 2000, the latest Newton model. It boasts many improvements: better handwriting recognition, a detachable keyboard, a new, faster (up to 10 times) StrongARM central processing unit (CPU), more RAM, bigger screen with 16 grey scales longer battery life and better connectivity options. For the education market, Apple announced the eMate 300, a lite notebook computer for the educational market. Apple also showed its new PowerBook 1400 model, which (finally) offers an internal CD-ROM drive. Apple also announced its ATM (asynchronous transfer mode) high-speed network technology, and a new high-end LaserWriter 12/640 PS printer.

Apple is far from out of the woods yet, but under the company's new head, Gilbert Amelio, the company is no longer losing money, and if the pace of new product releases can be picked up, it may once again return to the leading edge of the computer industry.

Contact: Apple, Tel: 905 477 5700.
Web site: http://www.apple.com

BeBox, a loo bop

PowerComputing chief executive officer Steve Kahng and Be president Jean Louis Gassee with one of PowerComputing's Mac clones that will be shipping with the Be operating system

In the PowerPC pavilion, a number of hardware and software companies were trying to excite crowds with PowerPC hardware and software. One product that caught our eye was the BeBox Dual603 from Be Inc. of Menlo Park, Calif. The Be OS operating system running on a dual 133 MHz PowerPC 603-equipped was pretty impressive and a multi-panel video and sound demo showed its multi-threading strengths. The Be OS was also running on a fairly normal single-processor PowerMacintosh. A spokesman said the Be OS would be available for the Mac early this year. In a separate announcement, PowerComputing, which makes PowerMac clones, said it will be shipping BeOS along with the MacOS with its new systems.

If you want a BeBox, the dual processor model is available now, and will set you back about US$3,000. Applications? With such a gorgeous interface, who needs 'em (seriously, porting of Mac applications is anticipated—Adobe is rumored to be preparing a BeOS version of Photoshop, for example).

Contact: Be Inc., Tel: 415-462-4100.
Web site: http://www.be.com

System Commander allows multiple O/Ses on a single PC

A new version of V Communications System Commander utility allows users to run multiple operating systems on a single PC. Its makers claim that version 3.0 of the program permits the installation of up to 100 operating systems, including Windows 95, Windows 3.1, Windows NT, DOS, OS/@, SCO UNIX, Solaris, Linux, and any other Intel-compatible O/S.

Continued on page **97**

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Email : staff@intergate.bc.ca

Color me Comdex

Continued from page ***95***

According to V Communications, "System Commander takes the fear out of upgrading from Window 3.1 to Window 95, since users can maintain both until they are ready for a complete transition. Gamers can run their favorite DOS games in their native environment, and then turn to Windows 95 to access the hottest 3D games on the market. Those who want to dabble in a UNIX platform can do so without investing in a separate system. The utility is the only way users can run several different language versions of a single operating system."

System Commander prevents "rival" O/Ses from trying to wipe out each other's critical files by taking control of the user's PC before a new O/S is run. Once multiple O/Ses have been installed, the user is shown a menu of O/S choices at startup, and can simply select the desired operating system to load. V Communications claims that System Commander doesn't require partitioning of the hard drive. System Commandeer sells for a street price of about $125.

Contact: V Communications, Tel: 800-648-8266.
E-mail: mike@v-com.com
Web site: http://www.v-com.com

Broderbund expands action game line with Last Express, Tone Rebellion

Broderbund is an entertainment software developer that has been widely known in recent years for producing some of the most charming and entertaining kids' software on the market (such as the CD-ROM adaptation of Mercer Mayer's "Grandma and Me," one of the best-selling children's CD-ROMs ever).

At this year's Fall Comdex, however, Broderbund was promoting a group of well-produced action adventure titles, aimed at an older market. The Last Express is a new "thrilling adventure game from Jordan Mechner, developer of the award-winning Prince of Persia and Karateka." In the game, the player is Robert Cath, an American travelling on the Orient Express from Paris to Istanbul in July 1914. The game takes place in a 3D space that recreates the interior of the train, and the player can move throughout the train and interact with the other, digital characters in a very fluid and variable way.

The Tone Rebellion, created by the Logic Factory (Ascendancy) is a strategy game, where the player is the leader of one of four groups of Floaters, inhabitants of a world of floating Islands. The player has to learn to cooperate with other Floater societies, mine a resource called Tone, and avoid destruction by the Leviathan, the common enemy of all the Floaters. The game has a multi-player/Internet feature that allows multiple users to play simultaneously on several PCs at once.

Contact: Broderbund,
Web site: http://www.broderbund.com
Last Express, Web site: http://www.lastexpress.com
Tone Rebellion, Web site: http://www.tonerebellion.com

Joysticks from Canada's Advanced Gravis rule Comdex

Burnaby, B.C.-based Advanced Gravis Computer Technology added some fun and dynamism to Fall Comdex with its array of state of the art input devices for computer games and interactive multimedia software. At a demonstration for *TCP* at the Silicon Northwest party/mini-tradeshow held during Fall Comdex, representatives of the company showed off the latest in their line of joysticks and game pads.

Particularly impressive this year was the Gravis GrIP Game System, "the first multi-player, multi-button digital game system for the PC." The GrIP allows up to four players operate up to eight control buttons each. The GrIP system comes with a multi-port game hub, and two GrIP-Pad controllers, with ports on the game hub for an additional two controllers. Two versions of the system are available, one is bundled with a violent arcade-style fighting game, and the other with a multi-player hockey game.

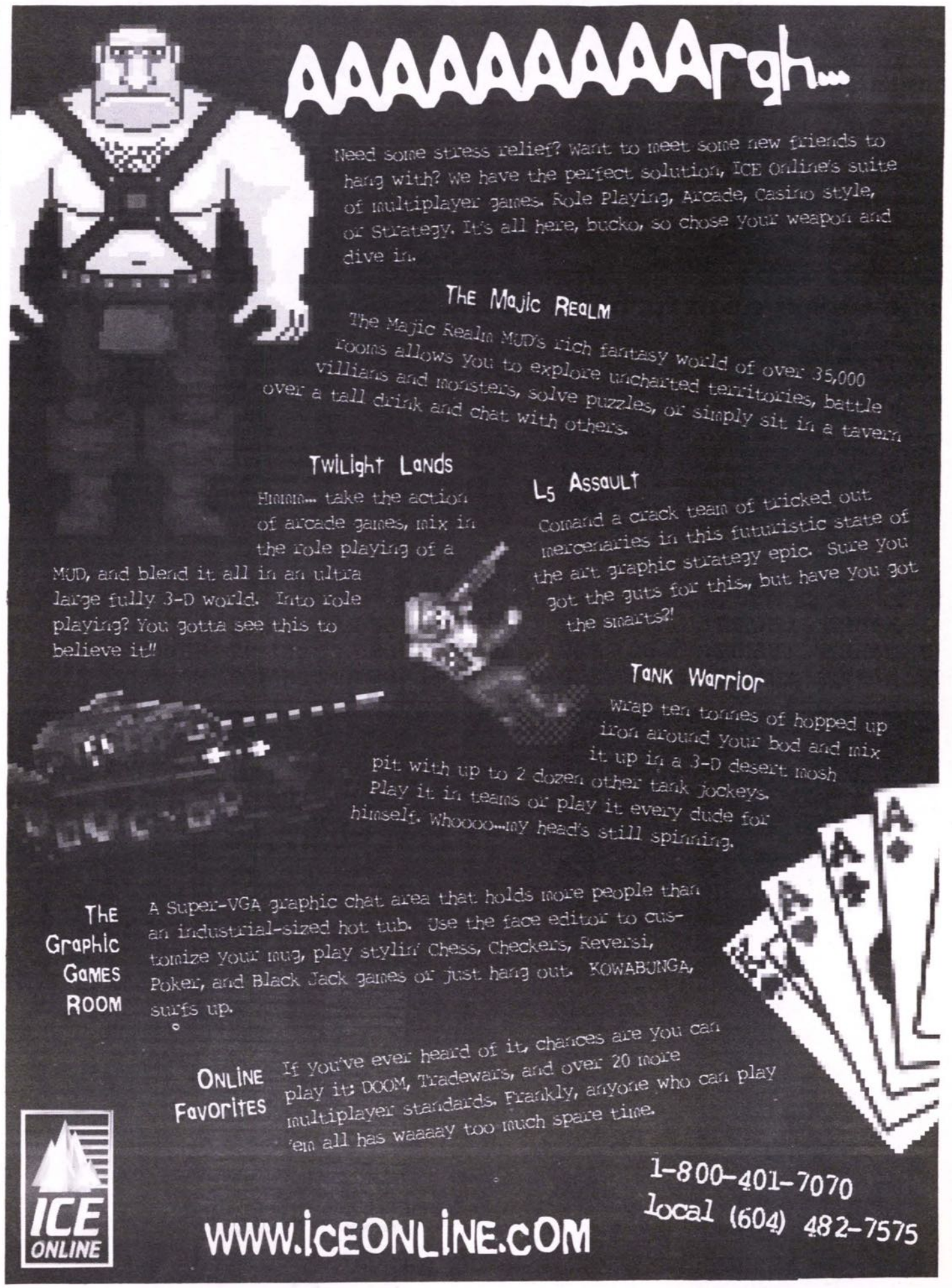
Also noteworthy was the Gravis GamePad Pro, a video console-style game pad for the PC, with provision for two players via its Y cable, and programmable buttons for transferring keyboard game commands to the pad.

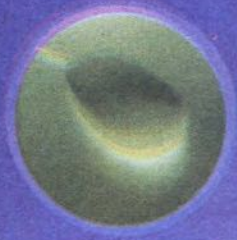
Contact: Gravis, Tel: 604-431-5020.
Web site: http://www.gravis.com

Lego set for the Digital Age

One product in the Canadian pavilion to watch for was shown by Longueuil, Que.-based Cameleon Informatique and Robotic. Its products, Techno Lab and Mini-Control, are educational tools, but can also be used as a construction kit for creative minds in a home setting. The hardware parts consist of snap-together building blocks, motors, wheels etc., and a wiring harness. The software teaches

Continued on page ***99***





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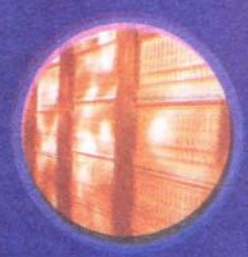

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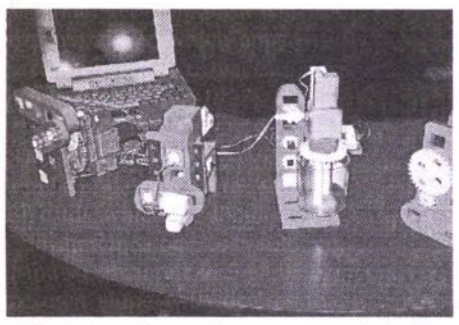


These Lego-like machines were created with Cameleon's Techno Lab and Mini-Control.

basic programming and robotics. Techno Lab users design and prototype their own models on the computer, and then build them in real space.

Contact: Cameleon, Tel: 514-651-6365.

Color document-management

Pagis Pro 97 from Xerox is a color document-management system. It allows you to scan color documents, then index, fax or run them through optical character recognition (OCR) software. According to Wayne Crandall, vice-president of software sales for Xerox's desktop document systems division, Pagis Pro will convert scanned color documents into a variety of file formats including MS Word, and also will create hypertext markup language (HTML) documents for the Web from the scan. Crandall says Pagis saves scanned files in an XIF format (Tiff 6 extended) and will compress a 1 MB file down to about 240K. The OCR engine inside Pagis Pro 97 is the highly regarded TextBridge Pro engine, also from Xerox.

Contact: in Canada, Xerox Canada, 416-229-3769
Web site: http://www.pagis.com

The emerging PC photography marketplace

We talked to Neil Snyder, president of Colordesk Inc. of San Jose, Calif., about a product called Colordesk Photo, which consumers will likely see bundled with scanners, digital cameras, color printers etc., in the near future.

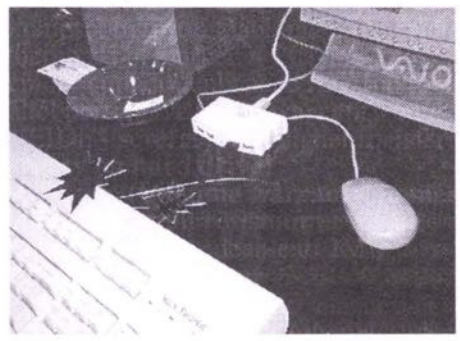
Snyder says people who are taking pictures today are not interested in image editing in the same way professional graphic artists are. They simply want their pictures to look good. "People who buy Adobe Photoshop are motivated, experienced, and do image editing for a living, or are hobbyists and are willing to learn the product," said Snyder.

"Our product is designed for people who take pictures and have no desire to do image editing. What [Photoshop] does manually, we do automatically. For example, if you go into Adobe Photoshop, you can adjust exposure, brightness, contrast, shadow, selective colors, hue, gamma, intensity and saturation, all manually. If you spend a couple of hours with the product, you can take a bad image and make it look good. We do all that for you—and that's our approach to the market."

Colordesk is a spinoff of Electronics For Imaging, which developed the EFIcolor color management system used in professional printing environments. Colordesk uses an EFIcolor engine, but the matching has been tweaked to accommodate consumer devices like digital cameras and inkjet printers. Snyder said the company has agreements with Logitech Primax, Canon, NEC, Argus Camera, along with some other pending deals he wasn't willing to disclose.

Contact: ColorDesk Inc., Tel: 408-879-6620.

Universal serial bus



Many peripherals (mouse, keyboard, etc.) can be plugged into one USB hub.

Universal serial bus (USB) was just a promise in 1995, but at Fall Comdex 96, a number of companies took part in the USB pavilion called BUS Stop. Products from Phoenix Technologies, Futuretech, Texas Instruments, Canon and Intel were all demonstrating their contributions to this new peripheral connection standard. Basically, USB is a medium-speed port to which you can connect keyboard, mouse, and other peripherals.

For example, Canon was demonstrating a hot Plug and Play USB connector on one of its ColorJet inkjet printers, but representatives would not say when such a product would be available.

Altec Lansing was demonstrating USB speaker systems, which the company claims is the first USB-enabled speaker system, and Phoenix Technologies says its Phoenix Bios now supports USB. Some people in the USB area said USB would get a big push with the next version of Windows, which apparently will have extensive USB driver support included when it ships in mid-1997.

Smaller forms of memory

A number of companies were showing CompactFlash cards, which are about the size of a book of matches or 3.64x4.28 cm (1.4x1.7 in.) and weigh about 11.5 g (.05 oz). These can be used alone with devices that have interfaces designed for them, or will drop into a PC Card carrier, which allows them to be accessed with a computer that has a PC Card slot.

Steve Larivee, with SanDisk Corp of Maitland, Fla., said his comapny just announced a 64-megabit, double-density flash RAM dies, "which allows us to store 2 bits in each domain." He said the next products will use chips that are slightly larger than 64 megabits, which will create a 10 MB card—"a nice round number." Sandisk will skip the 128 Mb generation and go right to 256 Mb. "That's going to allow us to do 30 MB in one die," said Larivee, who said the capacity of these CompactFlash cards should hit 100 MB by 1998.

Contact: Sandisk, Tel: 408-452-0500.
Web site: http://www.sandisk.com

Digital authoring tools

Ephyx V-Active creates hypervideo

At the Panasonic booth was a company from ➤

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Israel called Ephyx Technologies, demonstrating a family of video authoring/editing tools under the V-Active brand. Underlying the basic V-Active technology is what the company calls HyperVideo, which allows you to define hot spots within a video stream and link them to other video streams, or to sound, pictures or uniform resource locator (URL) sites on the Internet.

During the demonstration, a company representative presented a travelogue-style interactive video clip, which you could navigate with a mouse. If you hit a hot spot in the video—the roof of a cathedral was the example—the video cut to a video clip of the cathedral's interior.

The product is still in beta, and the company expects it will be ready for market by February, with an estimated price of US$695. Details for Canadian availability are unknown.

Contact: Ephyx Technologies,
Web site: http://www.ephyx.com.

miro, Fast ride digital video wave

Benefiting from a 40 percent increase in the digital video market in 1996 (according to IDC figures), the German video hardware company miro brought new PC video products to Comdex that caused great interest among attendees.

"miro's projected growth in video board shipments in 1996 will be about 233 percent, resulting in miro taking a 39 percent market share in the digital video board market," according to the independent IDC report, *The Video and Image Capture Board Market, 1995-2000.*

"We're not surprised by this phenomenal growth: we've witnessed incredible demand for the miro DC20 and we're seeing even greater interest for the just released miroVIDEO DC30," according to Jim Anderson, miro's vice-president of worldwide marketing. "We will maintain our advantage by continuing to introduce more aggressive price points for hardware combined with new, extremely easy-to-use editing software."

miro's line of digital editing systems for PCI-equipped Macs and PCs includes the entry-level DC10 unit, with a street price of about $499, and the DC20 unit for about $899 (both the DC10 and DC20 have been reviewed in *TCP.* The new DC30 model, aimed for the professional market, with a price of about $1,250, will reviewed in an upcoming issue).

miro chose to launch its new miroVIDEO DV100 (Firewire) solution for digital video editing at Comdex. The DV100 is compatible with Sony Digital Video (DV) source code, and is compatible with products such as the Sony VX1000 Digital Handycam, and is software upgradable to future DV equipment.

"The DV100 lets users keep video footage from a video camcorder in digital format through the entire production process, form shooting to storing to editing. This allows—for the first time—the production of first generation quality video from a desktop video system. First generation quality video is the highest quality video possible. With the miroVIDEO DV100 and control from the included miroVIDEO Story Tools, video footage can be scanned, scene locations auto-indexed, and then edited. Raw and unedited footage can simply be left on the camcorder's DV tape, giving users a virtual storage peripheral in their digital camcorder," according to miro. The company will sell the DV100 by itself, or bundled with the DC30 capture board for about $2,500.

Fast Electronic, also headquartered in Germany held a media briefing to roll out its Master Line of digital video editing products. Fast chief executive officer, Mattias Zahn, was at Comdex to announce the new line. A couple of Sony representatives were in the audience, watching the Fast card pull in a pretty good video stream from a couple of new Sony digital video cameras connected to the computer with a single IEEE 1394 "firewire" connector.

Contact: miro, Tel: 800-474-6476.
Web site: http://www.miro.com
Fast, Tel: 415-295-3500.
Web site: http://www.2FAST4U.com

Digital cameras and printers

Fuji's NC-2 digital/video printer

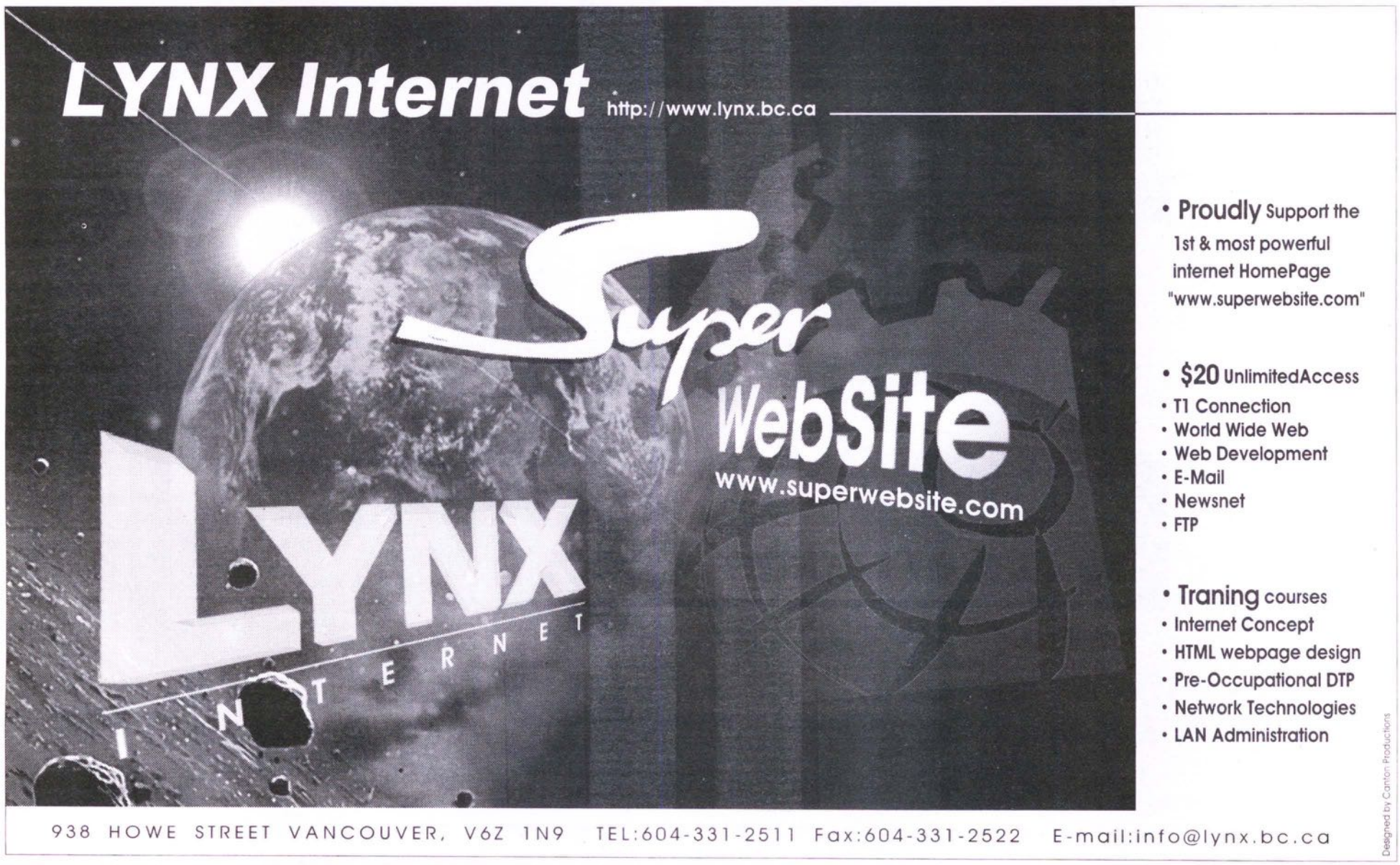
Expect to see a lot of digital cameras, along with devices like image printers that will allow you to set up a digital processing lab in your home for about $1,500.

Panasonic's TruePhoto and Fuji's PrintIt (which are the same device sold under two brand names) use a thermal process to develop the images (from digital cameras, scanned prints or captured video frames) onto special papers that have the heat-sensitive chemicals in them. The papers are made by Fuji and will probably cost $1 per 7.6x12.7 cm (3x5 in.) sheet. (The American representative said Fuji expected the cost to be about US$14.95 for 20 sheets, or US$0.75 per print). The printer itself will sell for about US$479.

A Panasonic representative said one print was left out in the sun for about six weeks with no signs of fading, but that the product hadn't been around long enough to evaluate the long-term stability of the image. We asked when and if the products would be available in Canada, but could not get an answer more definitive than "we don't see why not."

Special thanks to Epson, which loaned us a couple of its latest PhotoPC 500 digital cameras to use during the show. Most of the snapshot images you see accompanying this report were taken with the units. Overall, we were very happy with the cameras. They were light and easy to carry around, and the picture quality, while still nowhere near 35mm film standards, was surprisingly good. Epson had set up a media photo area where we could go to download images from the camera and e-mail them back to our offices in Vancouver, and that worked flawlessly.

Continued on page **102**



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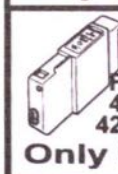

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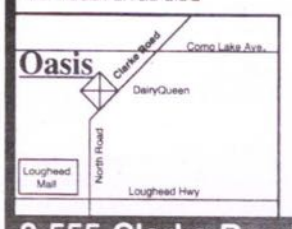

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Epson's PhotoPC 500

Agfa was demonstrating its Ephoto Model 307 digital camera, which comes with Adobe PhotoDeluxe image editing software.

It looked remarkably like an Epson PCPhoto500 with some cosmetic differences and when we asked if they were the same, the Agfa representative was a bit evasive. He did point out, however, that the Agfa unit is the only consumer-level digital camera to come with a glass lens. Agfa had side-by-side comparisons of pictures taken with its 307 and other digital cameras, and the image quality was at least as good. The estimated price on the Agfa is US$549.

Olympus Optical, which has a good reputation in the film camera market introduced two digital models. The D200L captures images at a resolution of 640x480 and has a suggested price of US$795. The model D300L will capture images at 1024x768 pixel resolutions, and has a suggested price of $1,195. The Olympus representative was demonstrating the D200L, whose images looked very good, with well-saturated colors and crisp details—at least when viewed on a computer monitor.

NCR Canada unveils advanced self service computer terminals for banking, electronic commerce

The Automated Banking Machine (ABM) has, along with video game consoles, been one of the key technologies for training the general public to interact with computer technology over the past quarter century. Canadians are perhaps the world's most enthusiastic users of ABM technology, with each of the major banks reporting hundreds of millions of ABM transactions annually in this country. NCR, one of the principal makers of ABMs worldwide, maintains ergonomics labs in Scotland and Atlanta, which have spent decades studying human-machine interaction and attempting to create user interfaces and machinery that is both idiot-and-vandal-proof. In line with the general progress of computer technology and the drive by Canada's banks to add more highly automated profit making services, NCR has launched its latest generation of computerized ABM terminals, which will be manufactured in Canada.

The new NCR personaS product line is intended to integrate the latest advances in PC and networking technology with banks' and consumers' changing needs. When ABMs were first introduced in the 1970s, they cost more than $100,000, and were slow and unreliable. The new personaS systems, which cost

➤

A virtual visit to Comdex

BY GEOF WHEELWRIGHT

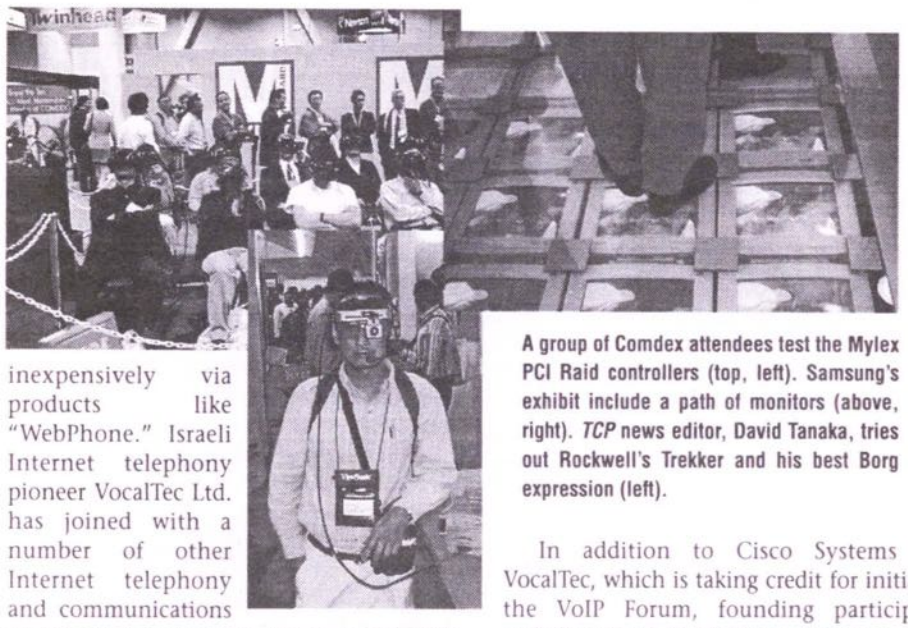
Our globe-trotting Mr. Wheelwright was so travelled out by November that he decided to forego Comdex this year. But with some useful tools of the trade—Web browser, telephone e-mail, fax and media releases—he managed to file this report without setting foot in Glitter City—Ed

To the casual observer, the recent Comdex/Fall 96 show in Las Vegas was all about the 25th anniversary of the microprocessor, the unveiling of the handheld computer based on Microsoft's new Windows CE operating system and the arrival of tons and tons of new products based on the Internet and intranets.

But in amongst all these big announcements were a smattering of small, but nonetheless interesting, product unveilings from many companies, some which rarely hit the limelight. To give you a different perspective on one of the largest computer industry annual trade shows, here is a selection of those announcements.

Getting on the Web phone

Software incompatibility has been a big problem for anyone who has wanted to use the Internet to hold voice conversations inexpensively via products like "WebPhone." Israeli Internet telephony pioneer VocalTec Ltd. has joined with a number of other Internet telephony and communications companies to solve this problem. The solution lies in the founding of what is called the Voice Over IP (VoIP) Forum, a cooperative coalition of Internet, telephony, hardware, software and networking industry leaders, whose formation is apparently intended to "create and drive rapid deployment of a set of standards for the compatibility of Internet telephony products."



A group of Comdex attendees test the Mylex PCI Raid controllers (top, left). Samsung's exhibit include a path of monitors (above, right). *TCP* news editor, David Tanaka, tries out Rockwell's Trekker and his best Borg expression (left).

In addition to Cisco Systems and VocalTec, which is taking credit for initiating the VoIP Forum, founding participants include a total of 40 initial members. They say they have joined forces based on their shared interest in accelerating the growth of telephony applications over the Internet, corporate intranets and bridging to the regular or public switched telephone network.

Contact: VocalTec Inc. in New Jersey,
Tel: 201-768-9400

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Color me Comdex

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$22,000 to $29,000 (including a heavily armored casing to deter thieves) offers the first Pentium-based ABM units, featuring gigabyte hard drives and sophisticated graphics and video capabilities, infrared touch screens, and high-speed connectivity options that range from satellite links, to digital fibre-optic networks to analog modems.

The new terminals are inherently modular and flexible in configuration, and can be customized with a variety of printer options (to allow for high-speed, counterfeit-resistant concert ticket printing for example). Future options include audio or even videoconferencing capability to allow user interaction with a live salesperson.

NCR Canada intends to expand its manufacturing staff at its facility in Waterloo, Ont. to 120 people, from about 70, with corresponding employment increases among its mainly Canadian parts suppliers. At full capacity, the company expects to be manufacturing about 900 units per month (the Royal Bank, by way of example, has built up a network of about 4,700 ABMs across Canada over the past 20 years). Canadian-built ABMs will be installed across Canada, the United States and Mexico.

NCR representatives claimed that ongoing research into improved interface technology includes expanded use of videoconferencing and voice recognition, and increased use of home-based sales staff by the banks. In the future, it seems, a computerized sales terminal will be a typical intermediary between the consumer and the vendors of an increasingly lengthy list of goods and services. ❑

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The PC inferno

Ever wondered how hot it gets inside a computer? Although it may seem silly, this is an important issue as an overheated computer can cause the metal legs of some silicon chips to expand and climb out of their sockets—potentially damaging the computer and making it run improperly.

A company called Quad-G Electronics in Mount Vernon, NY, released the CP-Vue line of personal computer "add-ons" designed to monitor and display the temperature within the computer case and central processing unit (CPU). These internal heat monitors claim to be able to warn users when their systems are approaching dangerously high heat levels, allowing them to save their files and power down before extensive heat damage occurs.

Contact: Quad-G, Tel: 914-668-7688.

Towards a better notebook

Notebook computers could soon have displays that look even better than what you find on desktop computers. Canadian graphics chip specialist ATI Technologies has announced what it claims is the industry's first LCD graphics accelerator for notebook computers.

It apparently integrates high-performance 3D rendering, leading 2D performance, TV-quality video playback, and true color transmitters on a single chip—the ATI 3D RAGE LT—for the notebook manufacturers' marketplace. "ATI's 3D RAGE LT, the first 3D chip for notebook computers in the world, is a no-compromise LCD controller chip," says ATI vice-president Henry Quan. "It results in a laptop system that can rival, even outpace, a desktop system. In fact, ATI reverses the usual two-year lag between desktop and notebook as the 3D RAGE LT has features some desktop systems do not."

Contact: ATI, Tel: 905-882-2600.

Where no lap has gone before...

Ever wanted a full-size keyboard to use with your notebook computer, but couldn't afford the space? Darwin Keyboards in San Francisco says it has the answer. It's called the NoteBoard and claims to be the first full-sized keyboard designed specifically for use with notebook computers.

The NoteBoard stands over a notebook's keyboard, and provides the functionality of a full-sized keyboard and features four special adjustable feet that allow users to position the keyboard directly over the notebook's keyboard. These feet adjust to six heights to accommodate notebooks of any thickness. The NoteBoard also features a built-in wrist rest.

Darwin Keyboards says the NoteBoard is designed for people who use their notebooks in stationary environments. When paired with a high-quality notebook screen, it claims the NoteBoard provides an inexpensive alternative to a docking station. It has full-sized keys, rather than the smaller Enter, Shift, Backspace, Control, and other smaller keys of notebook keyboards—and offers a dedicated numeric keypad. The NoteBoard is available in the standard version for $79.95 and NoteBoard Plus version that includes a mouse for $99.95. The NoteBoard is expected to ship sometime this month.

Contact: Darwin Keyboards, Tel: 415-922-9519.

Ready for video-ready modems?

Video-conferencing specialist PictureTel Corporation of Andover, MA, announced at Comdex the availability of its PictureTel LivePhone analog videoconferencing technology for the newest video-ready modems manufactured by Lucent and Rockwell.

LivePhone is PictureTel's new standards-based, software-only product that promises to "turn any multimedia personal computer into a video phone that operates over traditional, analog telephone lines that are in every business and home. PictureTel says this new technology, which is based on the International Telecommunications Unions H.324 standard for videoconferencing over analog telephone lines, is targeted to the small business and consumer markets, where videoconferencing systems that operate over digital telephone lines are not widely used."

LivePhone will apparently run on any multimedia PC running the Windows 95 operating system with a 100 MHz or faster Pentium chip. David Andonian, vice-president of PictureTel's Personal Systems Division, says that PictureTel's alliance with the industry's two leading modem chipset technology developers is a win for the customers of all three companies.

"Videoconferencing technology that operates over regular telephone lines will open up whole new markets for PictureTel, Lucent and Rockwell," he says. "This marketing relationship enables three industry leaders to introduce the benefits of visual communications to businesses and consumers who have not previously deployed ISDN-based solutions, but who will embrace this standards-based analog software product."

Contact: PictureTel, Tel: 508-292-5000.

DEC jumps on NLX definition

Digital Equipment Corporation made clear at Comdex that despite its ongoing offering of Alpha-based systems, it was supporting a new generation of desktop systems design that incorporates design features announced recently by Intel.

The company said that move was "in keeping with Digital's commitment to provide customers with leading design technology" and cost-effective enterprise solutions.

"We are very pleased to be a driving contributor in Intel's NLX definition," suggested Howard Elias, Digital's vice-president of worldwide business segments in the company's personal computer business unit. "Many of the customer benefits of the new specification—including easy access to the motherboard, disk, and other major system components—are shipping in our desktop products today."

Intel recently announced its new motherboard form factor, NLX, that is supposed to extend ease of serviceability and upgradability to an industry-standard desktop design. "Digital was valuable in helping Intel drive the new NLX specification," admitted Steve Werner, general manager, Intel's original equipment manufacturer (OEM) products and services division.

Digital says this new enclosure design, first released in the Venturis value line earlier this year, is now available across all Digital desktops—from the value line to the enterprise-ready Celebris systems, to the recently introduced Personal Workstation line. In addition to the low-profile version, Digital extends the technology to short tower/desk-side configurations.

Contact: Digital Equipment of Canada, Tel: 416-730-7000.

Continued on page **106**

Canadian firms out in force

BY GRANT BUCKLER

LAS VEGAS (NB)—Canada's technology companies made quite a showing at Comdex/Fall this year, helped along by no less a spokesperson than former prime minister Kim Campbell.

Campbell is now Canada's consul-general in Los Angeles. She opened a press conference that Canadian government officials held during Comdex to promote Canadian manufacturers at the show. In her remarks, Campbell said events like Comdex are important for drawing attention to Canadian products.

As in past years, the Department of Foreign Affairs and International Trade sponsored a pavilion for some of the Canadian firms showing their wares at the show. Several other Canadian firms had their own exhibits.

Among those present were:

Janna Systems Inc. • Headquartered in Toronto, Janna sells contact-management software. A newly released package, Janna Contact Pro, adds workgroup scheduling and opportunity management to the basic Janna Contact package. Another new release, Janna Contact Enterprise, combines all the features of the Pro package with links to Oracle and SQL (structured query language) Server databases. Janna also announced that both new packages can be embedded in Microsoft

Corp.'s Internet Explorer and Netscape Inc.'s Navigator browser as ActiveX components. At the same time, the company added data synchronization, which makes it possible to "check out" a subset of data for use on a portable computer. Janna Contact Enterprise starts at $699 per seat.

Software Solutions • The Toronto-based firm's twist on selling World Wide Web page creation software is to bundle in Web hosting services. Software Solutions will host up to 2 MB of hypertext markup language (HTML) plus embedded GIF (graphic interchange format) and JPEG (Joint Photographic Experts Group) graphics files for one year free of charge when you buy its WebXpress product, or for three months free when you buy its Instant Homepage software. Otherwise, the two packages are virtually identical, said Mark Pellicane, Software Solutions' president.

WebXpress sells for $89.95 and Instant Homepage for $29.95. After the free hosting period runs out, Software Solutions charges $7.50 per month, Pellicane said.

Mediatrix Peripherals Inc. • Risen from the ashes of failed Ad Lib Inc., a maker of PC sound boards, Mediatrix introduced Internet telephony technology that allows full-duplex, high-quality conversations over the Internet. The company let visitors to its booth test out the Audiotrix Phone by talking to a Mediatrix employee at its headquarters in Sherbrooke, Que.

01 Communique Laboratory Inc. • The Toronto firm announced that the 32-bit version of its Communicate! software is available. Communicate! manages fax, data, voice, and paging communications through a single phone line from a personal computer running Windows. The new version supports Windows 95 and NT and sells for $249. It is aimed at small office and home office customers, and includes an integrated contact manager, optical character recognition (OCR), and a color graphics editor.

Ooriane International • Montreal-based Ooriane launched its repository computer-aided software engineering (CASE) tool into the United States market. Nina Reich, president of Ooriane, also said Canada's Defence Department has chosen her company's software for use in developing a new personnel system data warehouse.

Televitesse Systems Inc. • The Ottawa-based maker of "software that watches television for you," as spokesperson Carol Martin put it, came to Comdex to launch its AccesTV

Continued on page **110**

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Netscape keynote address turns into product demo

BY PATRICK MCKENNA

LAS VEGAS (NB)—Jim Barksdale, president and chief executive officer of Netscape Communications delivered the third and final Comdex Fall keynote. After a quick outline of Internet and browser histories, Barksdale's presentation turned into a product demonstration of Netscape Communicator and a new, intuitive desktop interface component called Constellation.

Mistakenly called an operating system in certain media reports, Constellation is a customizable interface designed to "let information find you wherever you are, on whatever machine you are using," Barksdale said in his address.

The trend from Netscape and Microsoft is to create a desktop experience that will allow users to access the information they want regardless of the source. Whether it is on the World Wide Web, an intranet, hard disk, or a CD, information is going to be made available directly to a users' desktops with new software in 1997.

Barksdale clearly stated Netscape's goal to plant its products in the corporate world. At this time the company will focus its efforts on corporate intranets with plans eventually to bring that technology to general consumer desktops.

Additionally, he emphasized open platform computing. Using two ex-Microsoft employees, Barksdale demonstrated Communicator's ability to access Unix, Windows, and Macintosh-based data.

In his plans to focus Netscape products in the corporate environment, Barksdale said, "Companies spend 90 percent of their computing strategy time trying to keep people out. It should be the other way around."

From Barksdale's view, customers, partners, and resellers, all need to become part of the corporate intranet.

In a press conference afterwards, Barksdale said, "We see ourselves as a player alongside Microsoft."

Netscape also announced relationships with Marimba and Pointcast as the first contributing partners in the development of Constellation. At this time, Constellation is a code-name and more information concerning technical details and pricing will be revealed sometime before the mid-1997 debut of the product. ❑

Virtual Comdex

Continued from page **104**

Videconference from you lap

What do you get when you cross a camcorder with a notebook PC? Toshiba thought it would try and come up with an answer. The result was unveiled at Comdex in what Toshiba claims is the industry's smallest, lightest notebook PC camera.

The introduction is aimed at the OEM notebook computing market, towards notebook manufacturers requiring a state-of-the-art camera that enables videoconferencing and video-capture applications. Unlike conventional PC cameras, Toshiba says the IK-D30 camera used in the notebook was engineered "from the ground" up specifically to meet the demands of notebook computing.

Features include a lightweight (170 g, or six ounces) and compact (5x7.6 cm, or 2x3 inches) design, as well as a high-bandwidth 32-bit CardBus interface that claims to deliver digital video directly to the system bus faster, more efficiently and "with higher picture quality" than cameras using standard NTSC or parallel port connections. Power consumption is less than one watt.

"As mobile computing technology continues to evolve, notebook manufacturers are confronted with the need for advanced video solutions to attract new buyers," suggests Doug Freck, vice-president and general manager of Toshiba Imaging Systems (a division of Toshiba America Information Systems, Inc).

"The IK-D30 camera ideally meets that need, enabling notebook manufacturers to offer a computer that can videoconference over plain old telephone lines or the Internet... add pictures and video clips to presentations or documents... or put live images on a Web site."

The IK-D30 apparently yields true 640x480 image capture. Moreover, by basing the IK-D30 on a 330,000-pixel, 8 mm (1/3-in.) color charged-coupled device (CCD) image sensor, Toshiba says the capture is extremely precise, resulting in better image display.

The new camera can stand freely on any flat surface, or be clipped directly on the notebook's LCD panel. This clip-on design is supposed to let the camera be pointed towards the user for videoconferencing or be aimed away for video recording or capture. Samples of the camera were expected to be available in December with volume production beginning in the first quarter of this year. Sample pricing is US$500.

Contact: Toshiba of Canada Ltd., Tel: 905-470-3478.

Motorola offers Web surfing by word of mouth

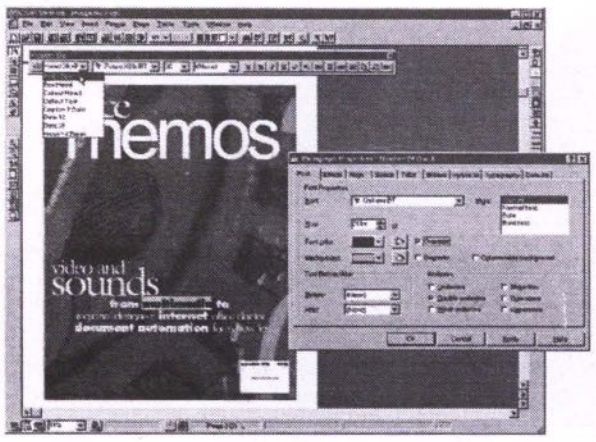
Motorola's Information Systems Group (ISG) showed off its new SM34DFV V.34 data/fax/voice host-based modem at Comdex with a demonstration that let users surf the Web using verbal commands to a Pentium system configured with the SM34DFV and loaded with speech recognition software from Lexicus, another Motorola division.

By speaking into the system, visitors could initiate a connection to an Internet service provider and navigate the Web to various sites, including some using software that supports audio streaming over the link. "The SM34DFV is a powerful software communications solution that addresses issues of cost, quality and upgradability for computer manufacturers," claimed Richard Leslie, vice-president of Motorola's ISG. "These demonstrations show how well this advanced technology works with mainstream consumer applications." ❑

Contact: Motorola, Tel: 874-576-5000.

Corel Ventura 7 and new multimedia titles launched

BY JEFF EVANS



Corel Corp. celebrated the official launch of Corel Ventura7 at Fall Comdex in Las Vegas. Regarded as the principal professional-level page layout and document publishing program on the PC during its heyday a few years ago, Corel has completely re-written Ventura as a 32-bit program for Windows 95 and Windows NT.

"Corel Ventura 7 has reached a new level of ease-of-use along with unprecedented publishing power. This latest version allows users to publish one document to paper, to a portable electronic Envoy document, or to the World Wide Web, while consistently maintaining formatting and markers," said Corel chief executive officer, Michael Cowpland.

The new version of Ventura aims to offer the most alternative publishing options, for "repurposing" documents for print, CD-ROM or Internet delivery. The basic program is supplemented with a host of additional applications, including Corel WordPerfect 7, Corel PHOTO-PAINT, Corel Database Publisher, Corel CD Creator, and many more.

Existing Ventura users (many of whom opted to continue to use Version 5 over the more recent Version 6, which gained a reputation for bugginess) are likely to welcome the new Ventura. Version 7 offers a range of new features, including Corel Barista, which allows users to create Web documents that can be read accurately and consistently on any Java-enabled device. An editor for SGML documents is also included. A simple Publish As command allows users to publish Corel Ventura 7 documents to hypertext markup language (HTML) or other formats.

The new version also has hi-fidelity color printing, including the Pantone HEXACHROME color library, advanced color separation and prepress tools (including full-page preview, trapping and color imposition, halftone type selection, and support for PostScript Level 2). There's also RGB to CMYK-TIFF file conversion, and more than 40 other graphic file formats and 50 text file formats supported.

Corel Ventura requires at least a 486 DX2 99 MHz PC with 16 MB of RAM, 256-color VGA display, 120 MB of hard-drive space, a CD-ROM drive, and Windows 95 or Windows NT 3.51 or higher. Realistically, a fast Pentium with 32 MB of RAM, a fast hard drive and a graphics accelerator with 2 to 6 MB of video RAM and the ability to display 16 million color images would be desirable.

Corel says it expects Ventura 7 to be shipping in quantity by the time you read this. The list price is US$895, with an upgrade price of US$249.

New titles released

Corel also announced the release of The Wild World of Madison Jaxx, an educational geography title in the Corel CD HOME line.

"The Wild World of Madison Jaxx is a comprehensive and fun way to learn about geography and current world affairs," according to Cowpland. The game, which shares some characteristics with the popular geography/detective title, Where In The World Is Carmen Sandiego, involves the player assuming the identity of any one of nine characters who track down criminals around the world. The sleuths include an archaeologist, an environmentalist, a filmmaker and a TV journalist.

The title, which comes on five discs, features digital video sequences, and adventures that lead the player to learn about the languages, history, politics, and culture of peoples around the world, as well as geography. The goal of the game is to solve cases by discovering information in the course of a character's travels and conversations.

The game requires a multimedia PC, with at least Windows 3.1, a 486 DX2/66 MHz, 8 MB of RAM, 23 MB of hard-drive space, 256-color VGA graphics, 16-bit audio, and a CD-ROM drive. Its street price is about $79.

The latest addition to the Corel Medical series, The Amputee, began shipping on Nov. 20. The title, written by members of the Royal Ottawa Regional Rehabilitation Centre, is aimed at helping amputees, their families and the general public to "develop a better understanding of the physical, emotional and practical needs of amputees." The Amputee is divided into an Overview section that contains general information on the subject, followed by three additional sections on types of amputations, prosthetics, and advanced prosthetic device profiles. ❑

Contact: Corel, Tel: 613-728-0826.
Web site: http://www.corel.com

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Weaving your own Web site: Part XVI

Publicizing your Web site: Part I

BY KEITH SCHENGILI-ROBERTS

In December's "Weaving your own Web site" article we looked at how you could publicize your Web site using traditional methods: contacting other Web masters and setting up reciprocal links, using banner ads, and the pros and cons of "Web awards." But these days, if somebody is looking for a site such as yours, they'll probably start their hunt via Yahoo, Alta Vista, Lycos, or any of the dozens of other popular search engines available. How do you get your listing in a Web search engine, and how do you make it appear prominent when somebody does a search on sites related to your own?

Getting listed

Most search engines allow users to enter new uniform resource locators (URLs) into their database. This process is usually pretty simple: click on a "Submit URL" (or something similar) button within the search engine and type in your URL. Many search engines will take things from there, and send out a "Web crawler" program a few days later to check out and automatically catalog your site. Other Web directories, like Yahoo, ask you to write a brief description of your site, and what category (or categories) you think it belongs in.

When you end the process, the Web search engine will typically check to make sure that a Web site does exist at the URL specified (you did spell everything right, didn't you?) and then the entry is added. In the case of Yahoo, a person will check out your site, determine whether or not it meets the particular search engine's criteria of being a useful site to include, perhaps do some editorializing on your Web site summary, and then, if your site passes the test, add it to its burgeoning database.

It is worthwhile to do some research before submitting a URL. If a search engine uses category listings, check to see which category best fits your Web site. If you find sites similar to your own in a category, you've found the right place to register yours. Do not assume a broad category like "entertainment" means the same thing for every search directory. Don't be shy to suggest a new category if you can't find one to match yours; the chances of your Web pages being truly unique diminish over time as the Web grows, so if no other category or sub-category quite fits the topic of your Web page, you may simply be the first to suggest the category.

While the process of adding URLs to individual search engines worked well when there were only a few Web search engines available, these days there are dozens of search engines available. While the majority of Web surfers tend to stick with one of the more popular search engines (Yahoo, Lycos, Alta Vista, Excite, Webcrawler, etc.), to draw in as many visitors as possible to your Web site, you want as much coverage as possible. If you target all of the major search engines, you can be sure that you will get some coverage.

There are services designed to partially automate the process of registering your URL with many different search engines. One of the most popular of these is Submit It! (http://www.submit-it.com/), a submission service that enables you to register your URL simultaneously at several search engines. You fill in a single, master form, select the search engines to post to, and it takes care of the rest. Like many such services, it now offers professional (i.e. pay-for-use) services for commercial sites, but it still offers a free service that enables

Continued on page **111**

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Canadians at Comdex

Continued from page **105**

video-searching software into the U.S. market. Though Televitesse has a few American customers, Martin told Newsbytes, it has not previously done much marketing there. Now the company is seeking out value-added resellers (VARs) to help it penetrate the U.S. market further. Michael Vlugt, channel sales manager, said Televitesse is seeking VARs that "have a really good understanding of video."

Corel Corp. • Kanata, Ontario-based Corel showed its much discussed Corel Office for Java applications suite and its new personal digital assistant (PDA), along with other products.

Enterprise Planning Systems • Based in Ottawa, Enterprise Planning formerly sold its business planning software at high prices, said David Flood, the company's director of marketing. Now it gives the base model away for downloading on the Internet, and has never been more profitable, Flood claimed at Industry Canada's press conference. The key is in selling add-on modules.

Mitel Corp. • Ottawa-based Mitel showed what it said is the first telephone with a universal serial bus (USB) interface for computer-telephony integration.

LaserMedia • The Toronto company announced ActiveAbs, a new interactive fitness video that Erik Schannen, LaserMedia's president, claimed is the first of a new genre. The software customizes the workout for each user, officials said. Due to be available in January, ActiveAbs is to sell for $29.95.

Some of these firms came to Comdex as part of Industry Canada's Team Canada program. This program may not exist in its present form by next year's show. Norman Lomow, deputy director of the Department of Foreign Affairs and International Trade's U.S. Business Development Division, admitted budget constraints threaten the program and one option is to turn it over to a private-sector company. ❑

MGI unveils VideoWave

Richmond Hill, Ont.-based MGI Software Corp. previewed its new VideoWave digital editing and effects program at Fall Comdex in Las Vegas.

VideoWave, which is designed to give the average PC users an extremely powerful, inexpensive and easy-to-use system for editing video on a home computer, is a 32-bit program for Windows 95 and Windows NT.

In a demonstration for The Computer Paper at the Silicon Northwest media night, a pre-release version of VideoWave was used to create sophisticated videos from raw digitized video footage. VideoWave has a simple interface compared to other digital video editing programs like Adobe Premier. On a notebook, VideoWave quickly and intuitively stitched together segments of digital video captured with a video capture card and created custom transitions, effects, animated titles, and saved digital video files in a variety of formats.

MGI wants to make high-quality digital-video editing literally child's play for the mainstream PC user. VideoWave is expected to ship in the first half of this year, and will have a street price of about $129.—*Jeff Evans*

Contact: MGI, Web site: http://mgisoft.com

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Weaving your own web site

Continued from page ***108***

users to register their URL with as many as 16 search engines and directories at once.

As search engines proliferate, many are targeting themselves at niche audiences, so now there are search engines being devoted exclusively to specific types of Web sites, like music (Music Search, http://musicsearch.com/) science fiction (Nebula Search, http://members.gnn.com/mochaman/nebsearch.html), financial (Money$earch, http://www.moneysearch.com) and many more. Go to a couple of search engines and type in the keywords "search engine" and a keyword reflecting the topic covered by your Web site. If you find a match, check out the search engine, and get your URL registered there.

HTML search engine tricks

Many of the search engines obtain URLs for their databases by sending out programs known as "Web crawlers," that go out and search for new URLs to add to the database. There is no human intervention—the Web crawler finds new Web pages, retrieves them, searches them for keywords, and then automatically adds them to the database. Knowing how these search engines work can help you bring your Web page to greater prominence within a Web search engine.

Since most Web crawlers end up searching for and storing pages by keywords that appear in the page, it makes sense to ensure that a keyword or keywords appear prominently within a Web page. At the very least, try to include an important keyword as the title of your Web page, and within the <TITLE> tags.

It has also been found that adding a description for the Web page using the <META> tag helps several Web crawlers to properly identify and catalog your Web page. This is not surprising, as one of the original reasons for the creation of the <META> tag was cataloging purposes. Use the NAME attribute of the <META> tag along with the CONTENT attribute and a brief description, such as in the following example:

```
<HEAD>
 <META NAME="description" CONTENT="Keith's Budgie Emporium">
-
</HEAD>
```

In general, it has been found that the more often a keyword appears within a Web page, the more prominent a listing it will get within a search engine. When a person searches for a common keyword term, most Web engines place priority on Web pages that contain multiple instances of that keyword. All things being equal, a Web page that uses the word "budgie" 10 times within a single page will appear higher in a user's search for budgie-related Web sites than a Web page that only contains nine instances of the word.

This practice can be taken to extremes—overt repetition of keywords is known as "search engine spamming." If you have ever seen a Web page with a number of keywords either hidden from view in the header of a Web page, or worse, visible within the body of a Web page, then you've run across a case of it. This technique is frowned upon, not only because it creates bulkier Web pages that take longer for the user to download, but because Web crawler designers are getting smart, and are changing the characteristics of their crawlers to compensate. While this technique may have led to a top listing within a search engine in the past, spammed pages are often passed over by Web crawlers—the designers have a vested interest in not promoting this technique.

Too many visitors?

Keep in mind that there can be some downsides to creating a very popular Web site. Take the case of a friend of mine who created a Web site that became popular overnight. At the end of the month, he got a whopping bill from his Internet service provider (ISP). It turns out that he was being charged for something he had no direct control over—the total amount of downloads from his Web site. His site made use of a lot of pictures and text, so whenever anybody visited his site, they "downloaded" all of the text and pictures to their systems. He was allotted 100 MB of free downloads from visitors, but was charged per MB for everything above that amount. Luckily he was able to work out something with his ISP regarding his site, and he immediately reduced the graphic content of his Web site, but it pays to check with your ISP to see if there are any hidden charges when you create a Web site. ❑

Keith Schengili-Roberts welcomes any comments, suggestions or HTML tips and tricks you may have. You can e-mail him at: kschengi@interlog.com. His book on HTML, The Advanced HTML Companion *is available in bookstores. Previous articles in the series can be found at The Computer Paper Web site: http://tcp.ca/ .*

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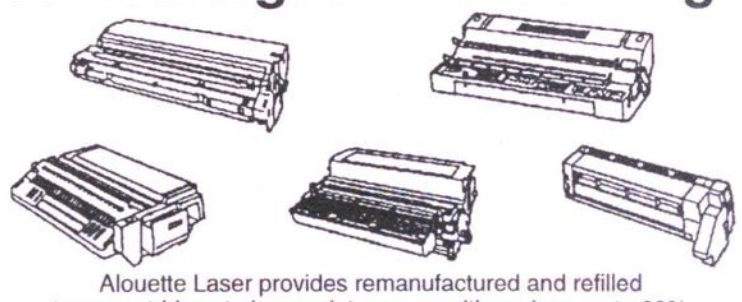

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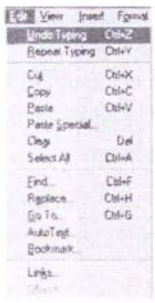
Sharing data between applications

Windows-based software eases the process

BY KIRSTEN SMESTAD

On the surface, Windows-based software applications are getting progressively simpler to use. The consistent menu commands and icons on the formatting toolbars make learning an application's basic features quick and easy. The downside of today's applications is that so many of their capabilities are never used, because learning beyond the basic features is not quite so easy. Often, the full capability of a program is never understood. One frequently unexplored feature of Windows applications is the built-in ability to share information between applications. Sound like a complicated process? Well, let's start with the basics and work from there.



The Edit menu is a feature of all Windows applications and is commonly used to move and copy data within a single document. It is not well understood that almost any type of data (text, numerical or graphical) can also be transferred to a different application.

For example, say you have a company logo created in CorelDRAW that you want to use in a letterhead created in Microsoft Word. Start up the Corel program, open the file that contains the logo and use the Edit menu to copy. Then, open up Word and use the Edit menu to paste the logo into Word. Transferring clipart or other graphic objects from one application to another is relatively simple, as the object format doesn't change. WordPerfect's clipart of a dragon will always be a picture of a dragon, no matter where you paste it.

Sharing text and numerical data across different categories of applications, such as a spreadsheet and word processor, requires a bit more knowledge. What is difficult to understand is how the receiving application will work with the information. For those readers who have used both a spreadsheet and word processor, take note that a spreadsheet will paste into a word processor as a table and any of the table commands can be applied. When transferring data in the other direction, from word processor to spreadsheet, the data must first be placed in table format, or separated into columns using tabs.

For example, when copying a table created in Microsoft Word to Excel, the table rows and columns are recreated in the spreadsheet. If tabs are used to separate the columns of data in Word, Excel determines the columns by each depressing of the tab key.

Scraps is a new feature built into Windows 95 and Windows 95 applications. Instead of using the Edit menu to copy and paste information, a scrap can be created by selecting the desired text or graphic and dragging it to the desktop (the application in use cannot be maximized to full screen, a piece of the desktop must be visible in the background). A separate scrap file is created on the desktop, which can be dragged (copied) into a new document.

The more technical stuff

When an item is selected and cut or copied using the Edit menu, it becomes a separate object and is placed on the Windows clipboard. The clipboard is a utility that acts as a temporary storage area. You can see the contents of the clipboard by opening the Clipboard Viewer located in the Main Group in Windows 3.x and in the Accessories group in Windows 95.

The object on the clipboard is placed into a document by using the Paste command. There is no time limit or specific order in which an object on the clipboard has to be accessed. However, only one object can be in the clipboard at a time. An object remains on the clipboard until something else is cut or copied to the clipboard, or until the Windows program is shut down.

For Windows 95 users, the difference between using the clipboard and a scrap is that a clipboard object resides in temporary memory (unless it is actually saved using the Clipboard Viewer) and a scrap object is immediately saved as a file on the hard drive.

Note for Windows 95 users

Depending on which Accessories options are selected when Windows 95 is installed, the Clipboard Viewer may or may not be accessible. If the Clipboard Viewer is not visible under the Accessories group, it can be added using the Windows Setup feature located under the Add/Remove program icon in the Control Panel.

OLE

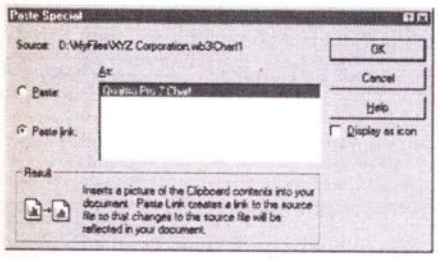
The technical term for sharing information between applications is object linking and embedding (OLE). This is standard in Windows and Windows applications since the advent of Windows 3.1.

However, OLE is far more sophisticated than just providing the ability to copy objects from one application to another. Part of the essence of OLE is the ability to link objects together, so that when you update the information in the file that contains the original (or source) data, the receiving (or container) file will also be updated. Alternatively, you can embed objects from one application into another.

Unlike linking information, which places only a representation of the source data in the container file (there is a dispute in the litera-

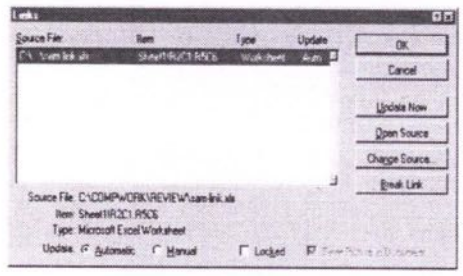
ture on whether the appropriate terms are source/container or client/server), embedding an object places all the information necessary to edit the object in the container file.

When objects are linked, changes to data in the source file will automatically be updated in the container file. If an object is embedded, double clicking on the object will allow you to edit it using the actual application it was created in. As you can see, this is quite a detailed topic, but if you want to try linking and embedding, use the Paste Special command rather than the Paste command when pasting an object from the clipboard.



If you create a graph from some financial data using Quattro Pro and want to include it in a report written in WordPerfect (any of the major spreadsheet or word-processing applications can be applied here), linking the data using the Paste Special command when placing the clipboard object into WordPerfect ensures the graph remains current when you make changes to the original.

When an object is linked to a source file, the Links command under the Edit menu is available to control whether you want to manually or automatically update the linked information every time the source is changed.



If you have to transfer the report to another co-worker to continue editing, you need to transfer both the container and source files. If you embed the graph into the report, also using the Paste Special command, just don't select the Links option. You create a much larger file, but all the information can be transported as one unit.

This article illustrates some ways you can use the Edit menu to transfer data between Windows-based applications. When you transfer information using the clipboard the object linking and embedding capability of Windows is being utilized. OLE is a very powerful feature as it allows the user to work beyond the limitations of a particular application.

OLE is evolving, and for this reason not all Windows applications share information with the same degree of success (DOS-based applications have no OLE capability). For example, problems may occur when trying to copy information between newer and older applications. If you want to test two applications for OLE compatibility, try copying objects from one to the other. You do not have to understand the technical details of OLE to take advantage of its capabilities, however, when actually linking and embedding information, it is important to read a bit about the process.

You can look up the topic in the Help menu of the particular applications you are using and refer to the section on object linking and embedding in just about any book about Windows. For a hands-on practical guide on how to share information between applications, check out *OLE for Dummies*, by John Mueller and Wallace Wang. ❑

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Contact: IBM's Year 2000, Web site: http://www.software.ibm.com/year2000/index.html

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IrDA beams at Comdex

BY LINDA DAILEY-PAULSON

LAS VEGAS (NB)—More mobile computers and consumer electronics are integrating infrared communications into their array of capabilities. Many of these manufacturers, including many of those recently announcing palmtops with Windows CE, adhere to standards created by the Infrared Data Association (IrDA).

Infrared data is transferred by a means similar to the technology in your TV or stereo remote control. When two infrared transmitters/receivers are aligned and activated, they can transfer data between computers or serial devices such as printers.

The IrDA "Beam It Over IrDA" booth at Comdex displayed products by more than 20 firms with devices and applications using the IrDA standard. Clearly, IrDA ports and software are becoming a feature routinely included on products. This includes Windows CE and the new handheld PCs, such as those recently introduced to the market by Casio and NEC.

"We've moved faster and caused more products to roll out than any other standards group," says Brian Ingham, of IBM Canada's infrared market development group. "The computing and communications industries have embraced these standards faster than any other technical standard."

In the coming year, even more printers and portable peripherals will have IrDA serial ports, as will an increasing number of pagers and digital phones. Sony, for example, had a nifty little digital camera with an IrDA port on display. With the link between the camera and another IrDA device, you can, for example, instantly download digital photos to a laptop or print them without the need for cables.

Puma Technology and Traveling Software were among the software developers demonstrating their file transfer application software. And Nokia Mobile Phones and other cellular devices were on display.

These standards were created by the industry consortium to assure consumers shopping for a computer or peripheral that an item displaying the group's service mark works with other IrDA-certified equipment.

John LaRoche, IrDA's executive director, says the trade group's strongest estimates about the implementation of this technology are in the notebook computer market. He says about 60 to 70 percent of all notebooks shipped in 1996 will be IrDA capable. More than eight million notebook personal computers with IrDA ports have shipped to date, according to IrDA.

Says Ingham, "Consumer electronics are going digital. There is no longer a need to carry around a bunch of short cords." A sign on the booth wittily summed up the message of the standards group: "Friends don't let friends use cable." ❑

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USER GROUPS

ATTENTION USER GROUPS. Send in your listing (maximum 120 characters) for the January issue by Friday, January 3, 1997. Submissions run for one month only in the local edition. *The Computer Paper* reserves the right not to print submissions which are deemed unsuitable.

ACM/SIGGRAPH Computer Graphics. 2nd Tuesday, at 420 Homer St. Call Tom Berryhill at 734-3976.

ADAM OWNERS! Vancouver Island Senior ADAMphiles (Visa): newsletter, meetings, supplies. Contact David Cobley, #17, 885 Berwick Rd, Qualicum Beach, BC V9K 1N7. (604) 752-1984.

ALT.2600 VANCOUVER USER GROUP. Meeting are 1st Friday of each month at Pacific Center Mall by payphones in food court, north of Dunsmuir at Granville 4pm to 9pm. Starts early to catch the evening shift 2600ers. For more information contact Steve via email at <sage@vanbc.wimsey.com> or <sage@rainbow.descon.com>

AMIGA USER GROUP (PaNorAmA) For meeting times and place call: Ray Norman 589-7199 or Robert Hardy 942-8364. BBS numbers 231-0363 or 231-0364.

APPLES B.C. COMPUTER SOCIETY. A User Group for Macintosh and Apple IIs. Macintosh meetings are on 3rd Wednesday of each month at the York House School in Vancouver at 7 p.m. Novice and other special-interest groups are held mid-month. Apple II meetings are on 1st Monday of each month at 7 p.m. at the Century House in New Westminster. For further information call 437-9935 or 299-9597.

ATARI USERS! Vantari, P.O. Box 3614 Main Post Office, Vancouver, BC V6B 3Y6. Bill Sutherland 988-1450; Don Hatch 433-8055. Meets 2nd Wednesday, 7:30 p.m., Hastings Comm. Ctr., 3096 E. Hastings.

B.C. EDI USER GROUP. For more information call 532-8204 (preferred), or voice mail 532-8219.

B.C. INTERGRAPH USERS GROUP (BCIUG). Contact: Mike Barnes 528-1936 (voice) or 528-2944 (fax) for info on next meeting.

B.C. OPENSTEP GROUP. Regular monthly meetings focus on various themes, for single users, corporate users and developers in the Vancouver area. NextStep and Open Step are the preferred platform for rapid development. For meeting information and email server call Kevin Hiebert at 264-1584 or <khiebert@wimsey.com>.

B.C. REGIONAL USERS GROUP SOCIETY of Hewlett-Packard Users. For information, call Daren Statichuk at 661-8753 or BCRUG at 661-8048.

B.C. VAX/VMS Local Users Group (BCVAXLUG) provides a forum for the professional growth and education of its members through the exchange of solutions, ideas, and opinions. User group meetings are held the 3rd Wednesday of every other month at 6:30 p.m with location to be advised. For further info please call voicemail 276-6966.

BIG BLUE AND COUSINS. PO Box 5309, Station B, Victoria BC V8R 6S4. General meeting last Wednesday, 7:30 p.m. at U. Vic.-Elliott Bldg., Lecture Theatre 168. Also, special interest group meetings. 382-3934.

CANADIAN INTERGRAPH USERS GROUP CONFERENCE. September 8-11, 1996. Delta Meadowvale, Mississauga, ON. "Drive The Open Road". Contact Laura Banman, Intergraph, 2912 Memorial Dr. SE, Calgary AB T2A 7R9. Voice: (403) 569-5562 Fax: (403) 569-5801 e-mail: ljbanm@ingr.com

CANADIANS ON COMPUSERVE. Canadians around the world and anyone interested in things Canadian are joining the Canadian issues section of The Issues forum on Compuserve. Lively discussions center around politics, society, customs and conflicts. Plus, there's a growing library of Canadian files. Go Issues at any CompuServe prompt. Dial 1-800-848-8199 for more info.

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COREL ARTISTS USER GROUP. Last Tuesday of every month, 7:00 to 10:00 pm, at Kwantlen College in Richmond, BC. Monthly newsletter. Contact: Bev Harcus, 533-5854.

DATA-LINK/USERS GROUP. Tel 321-3387. PC support BBS: 321-8873 (24 hr service), with specialized self-made BBS software. The purpose of this User group is to allow users to get together for problem solving, discussion of setup and to meet people. Call by voice 8 a.m.-4:30 p.m. ONLY please. This group is dedicated to RoboBOARD by Seth Hamilton. Other BBS software are welcome. Membership is free!

FOXSOFT, EDMONTON'S FOXPRO USERS GROUP-second Tuesday, 7.00 pm, Grant MacEwan City Centre Campus, East Wing, Room C-137/C-135, 10700-104th Ave. Contact: Ken Rayner at 437-0315 or Robin Stuart at 460-3712 (days). Info Bulletins on BBS 457-4105.

GENERIC CADD USERS GROUP. Contact: Frank Zander (604) 582-8283. BBS: 294-8287 (9600 n,8,1).

HELP DESK INSTITUTE LOCAL CHAPTER. An organization providing training, education and a networking forum for Help Desk Professionals: Those people who help computer users with hardware or software problems. For more information on memberships, please call Karen Yuen at 631-6088.

INDEPENDENT COMPUTER CONSULTANTS ASSOCIATION OF BC. The ICCA is a non-profit association of consultants who provide services in the field of Information Technology. The objectives of the ICCA are to provide a forum where consultants can network with each other, exchange ideas, and improve their business and computer skills. Monthly meetings with speakers. For further information contact us at: PO Box 820, Bentall Station, Vancouver, BC V6C 2N6 tel: 682-2747 fax: 681-0916 email: icca@mindlink.bc.ca / WWW: http://www.icca-bc.org/icca/

LOTUS NOTES. - see "Pacific Notes User Group"

MACWEST COMPUTER SOCIETY. Meetings for members and visitors include PD copy sessions. General meetings: 2nd Wednesday of each month; Beginner's meetings: 3rd Wednesday of each month. 7:30 p.m., Coyote Creek Golf Club, 7778 152 St., Surrey. Messages and information at 268-9530.

MS ACCESS TECHNICAL USER'S GROUP. For those who want to participate in learning more about MS Access. For information call Greg Hind at 454-0262, from 9:00 to 5:00.

NANUGS (Northern Alberta Novell Users Group Society) - meets quarterly at the CompuSmart store on Mayfield Road. For information, please e-mail to nanugs@freenet.edmonton.ab.ca or phone Mike Brown (403)487-7666.

OBJECTS USER SOCIETY. See British Columbia OpenStep Group (B.C.O.G.).

OPENSTEP USER SOCIETY (VNUS). See British Columbia OpenStep Group (B.C.O.G.).

PACIFIC NOTES USER GROUP (PACNUG) - Lotus Notes users meet the last Wednesday of each month except Aug. & Dec. 5:30pm at IBM Customer Center, 9th floor, 701 W. Georgia. RSVP to Delores Beier at 988-2141 or delores-b@awcda.com

PC/MAC USER GROUP. Wanted Professional Photography/Graphic Designers to share, network and learn the latest hardware and software programs available. Starting May 7th we will meet at 7:00pm every 1st and 3rd Tuesday of the month, at Tricera Computer Center, #203-1836 W 5th Ave. If you are interested please contact: B. Hanington at either 873-6915 or rasta@mindlink.bc.ca for further info.

PORT COQUITLAM COMPUTER CLUB. Commodore, Amiga & IBM. 1st & 3rd Tuesday, 7:30 p.m., Room 104, George Pearkes Jr. Sec. School, 1390 Laurier Ave., Port Coquitlam. Mike Evans 942-4286.

POWER BUILDER. User group being formed. Meetings are planned for first Wednesday. To enroll call Perform System Developers at voice mail 604-264-0247.

SQL SERVER. User group being formed. Meetings are planned for first Monday. To enroll call Perform System Developers at voice mail 604-264-0247.

T.I. 99/4A COMPUTER B.C. 99er Users Group, every Thursday 7-10 p.m. For information, call Ron: 522-2598. 1st Thursday Tutorials, 2nd Thursday General, 3rd Thursday Tutorials. 4th Thursday Library night. BBS "Dial A T1" 522-9830 TI only please.

TEENS IN VANCOUVER USER GROUP. For teens under the age of 16 interested in doing computer related projects regularly, WWW, programming, games; anything! The main goal is to share computer knowledge and to make friends. If there are any homeschoolers interested, that would be great. If interested, please call Orton Mak at 926-2835.

THE TOPKIDS CLUB. A user group for kids, teens and parents. Monthly meetings are family focused with software/hardware demonstrations, guest speakers, Windows and Mac tips and online demonstrations. A BBS is available to members. Call Garland Coulson 279-5439 or email garland_coulson@topkids.com

VANCOUVER AUTOCAD USERS SOCIETY. 1st Wed. of the month, 7:30 p.m., B.C.I.T. Bby. Campus Bldg. SW5 Room 1850. Contact: Frank Zander (604) 582-8283.

VANCOUVER DELPHI DEVELOPERS ASSOCIATION meets once a month at the Vancouver Public Library (downtown). The meeting is usually on the 2nd or 3rd week of the month on Tue or Wed depending on availability of facilities. The purpose of the group is to provide a common and regular forum for Delphi developers to get together and discuss Delphi related issues. $10 admission to cover rental of room. All meeting notices are sent via fax or email. To add your name to our distribution list, send company name, address info, phone, fax and e-mail to Michael Li at 76307.720@compuserve.com or fax: (604) 432-1799 or tel: (604) 432-1709.

VANCOUVER ENTERPRISE FORUM. 432-8761.

VANCOUVER FOXPRO USER GROUP (VFUG). September-June, 2nd Tuesday, at 1900 hours; 200-1177 W. Broadway. Info Doug at 736-2922, BBS 231-9709 and e-mail to joytan@uniserve. com

VANCOUVER GEOWORKS USERS CLUB. For further info. please call: 683-7490 (eves).

VANCOUVER GEOGRAPHIC INFORMATION SYSTEMS USER GROUP. Meetings are held on the 1st Wednesday of each month, September through May, at B.C.I.T. Town Square Room 'C' at 7:30pm. Contact Dwight at 940-1518 for information.

VANCOUVER KAYPRO USERS GROUP-VANCOUVER PORTABLE COMPUTER CLUB (VPCC), AMO 17, friendly members, heritage CP/M software, the latest DOS and Windows files, plus inexpensive access to the planetwide Fidonet! Visitors welcome to our BBS. Contact person: Jay Siegel, 4251 Lancelot Dr, Richmond, B.C., V7C 4S4, 271-1519; BBS 271-5934.

VANCOUVER MACINTOSH USER GROUP (VMUG). Vancouver's newest Macintosh Users Group, serves Mac users in the Vancouver, North Shore and Burnaby areas. Everyone is welcome, regardless of experience. Visit our Web Site at http://www.seercom.com/vmug and join online or call 988-8090 or email sking@direct.ca for more info.

VANCOUVER NETWARE USERS GROUP (VNUG) is an official user group recognized by the Netware Users' International Assoc. and supported, in part, by Novell. Meetings are held on the first business Monday of every month at The Stanley Park Dining Pavilion. All aspects of the networking environment are discussed and presented with emphasis on the Netware network operating system. The workshop begins at: 4:00p.m., buffet dinner at 6:00pm, at 7:00pm is a Q&A session followed by a presentation ending at around 8:30pm. Member, no-member and student pricing applies to the workshop and/or dinner-presentation. For further information or meeting topic announcements call our voice mail at 689-VNUG (689-8684) .

VANCOUVER OS/2 USER GROUP. Attended by OS/2 gurus and novices alike and well supported by IBM. The large and lively meeting is held on the first Wednesday of each month at the BC Tel Building, 3777 Kingsway, Burnaby and starts at 6:45 pm. Join us for an informal workshop beginning at 11:30 am on the first and third Saturdays of each month at Doppler Computer Superstores, 485 W. 8th Ave., Vancouver. Contact: Jim Shewchuk 876-4780.

VANCOUVER PC USERS SOCIETY (VPCUS), 2nd Thursday, 7pm at Science World, $5 guest admission. General Q&A session, feature presentation. Special Interest Groups (see also separate listings) and educational seminar registration. On-disk newsletter. Telephone: 290-0660.

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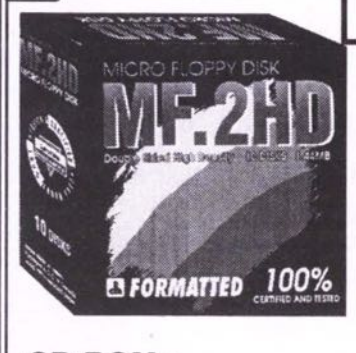

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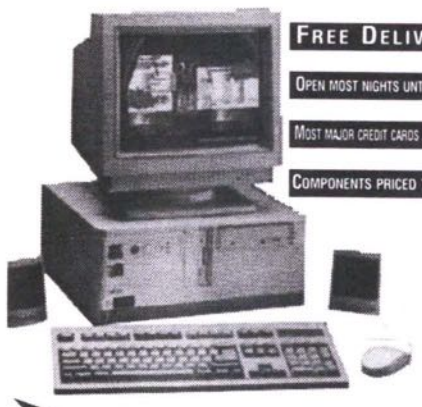

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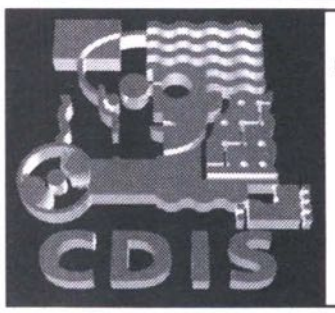

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USER GROUPS

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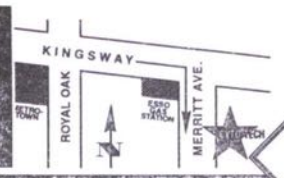

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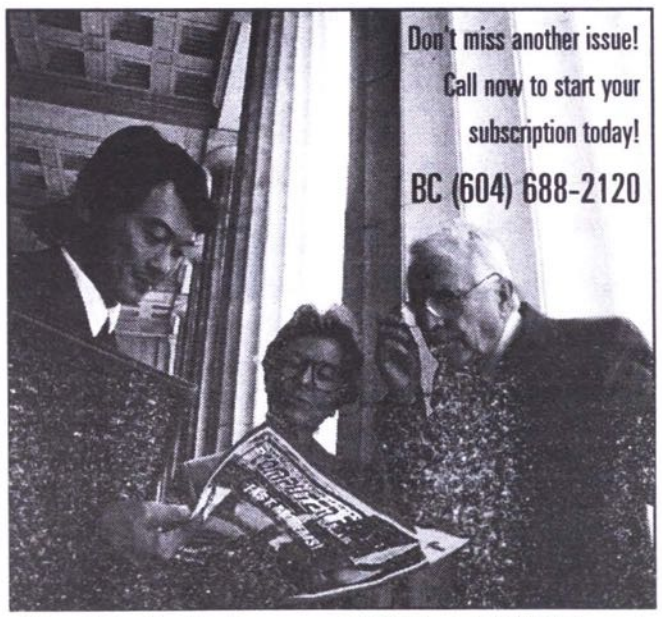

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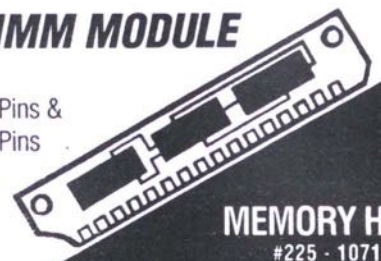

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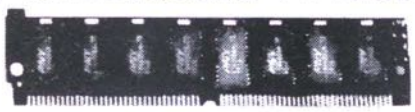

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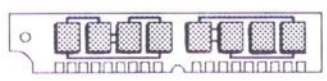

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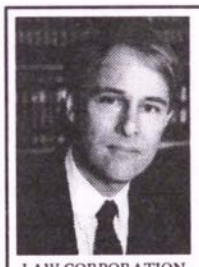

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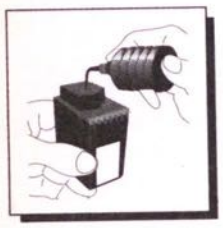

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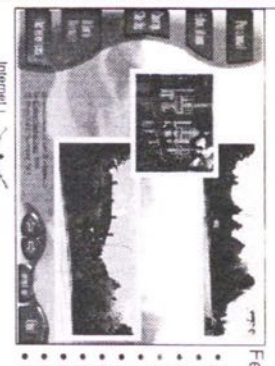

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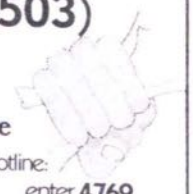

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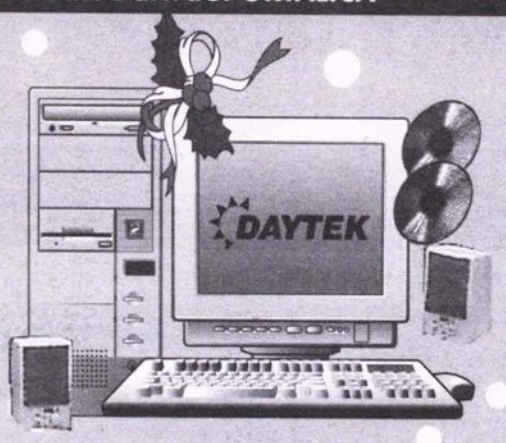

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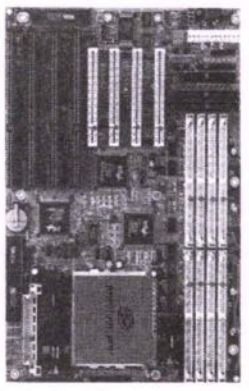

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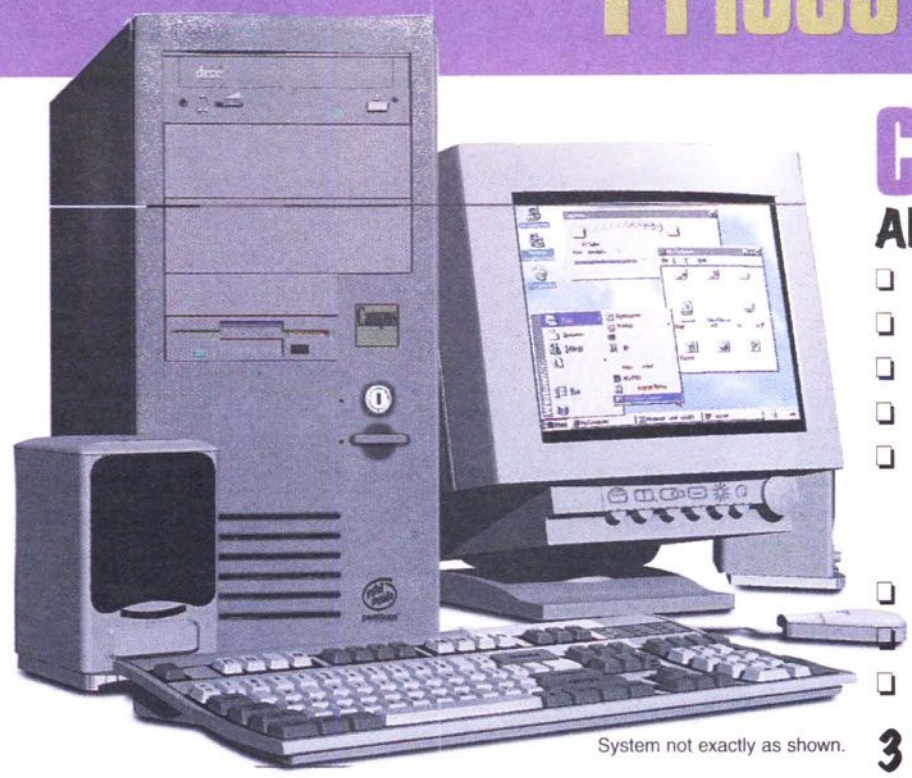

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